CAPACITY MANAGEMENT TOOLS
USER MANUAL

Version 2.0

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Department of Veterans Affairs
VistA Health Systems Design & Development (HSD&D)
Development and Infrastructure Support (DaIS)

Revision History

Documentation Revisions

The following table displays the revision history for this document. Revisions to the documentation are based on patches and new versions released to the field.

Date	Revision	Description	Author
03/24/04	1.0	Initial Capacity Management Tools V. 2.0 software documentation creation.	Robert Kamarowski, Bay Pines, FL OIFO and Thom Blom, Oakland, CA OIFO

Table i: Documentation revision history

Patch Revisions

There are no patches for this initial release of the Capacity Management Tools Version 2.0 software. In the future, for a complete list of patches related to this software, please refer to the Patch Module on FORUM.

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- Technical Writer—Thom Blom

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Orientation

How to Use this Manual

Throughout this manual, advice and instructions are offered regarding the use of Capacity Management Tools software and the functionality it provides for Veterans Health Information Systems and Technology Architecture (VistA) software products.

This manual uses several methods to highlight different aspects of the material:

- Various symbols are used throughout the documentation to alert the reader to special information. The following table gives a description of each of these symbols:

Symbol	Description
	Used to inform the reader of general information including references to additional reading material.
	Used to caution the reader to take special notice of critical information.

Table ii: Documentation symbol descriptions

- Descriptive text is presented in a proportional font (as represented by this font).
- HL7 messages, "snapshots" of computer online displays (i.e., roll-and-scroll screen captures/dialogues) and computer source code, if any, are shown in a *non*-proportional font and enclosed within a box.
  - User's responses to online prompts will be boldface type. The following example is a screen capture of computer dialogue, and indicates that the user should enter two question marks:

```
Select Primary Menu option: ??
```

  - The "**<Enter>**" found within these snapshots indicate that the user should press the Enter key on their keyboard. Other special keys are represented within < > angle brackets. For example, pressing the PF1 key can be represented as pressing **<PF1>**.
  - Author's comments, if any, are displayed in italics or as "callout" boxes.

Callout boxes refer to labels or descriptions usually enclosed within a box, which point to specific areas of a displayed image.

- All uppercase is reserved for the representation of M code, variable names, or the formal name of options, field and file names, and security keys (e.g., the XUPROGMODE key).

How to Obtain Technical Information Online

Exported file, routine, and global documentation can be generated through the use of Kernel, MailMan, and VA FileMan utilities.

Methods of obtaining specific technical information online will be indicated where applicable under the appropriate topic. Please refer to the *Capacity Management Tools Technical Manual* for further information.

Help at Prompts

VistA software provides online help and commonly used system default prompts. Users are encouraged to enter question marks at any response prompt. At the end of the help display, the user is immediately returned to the point from which he/she started. This is an easy way to learn about any aspect of VistA software.

To retrieve online documentation in the form of Help in any VistA character-based product:

- Enter a single question mark ("**?**") at a field/prompt to obtain a brief description. If a field is a pointer, entering one question mark ("**?**") displays the HELP PROMPT field contents and a list of choices, if the list is short. If the list is long, the user will be asked if the entire list should be displayed. A **YES** response will invoke the display. The display can be given a starting point by prefacing the starting point with an up-arrow ("^") as a response. For example, **^M** would start an alphabetic listing at the letter M instead of the letter A while **^127** would start any listing at the 127th entry.
- Enter two question marks ("**??**") at a field/prompt for a more detailed description. Also, if a field is a pointer, entering two question marks displays the HELP PROMPT field contents and the list of choices.
- Enter three question marks ("**???**") at a field/prompt to invoke any additional Help text stored in Help Frames.

Obtaining Data Dictionary Listings

Technical information about files and the fields in files is stored in data dictionaries. You can use the List File Attributes option on the Data Dictionary Utilities submenu in VA FileMan to print formatted data dictionaries.

For details about obtaining data dictionaries and about the formats available, please refer to the "List File Attributes" chapter in the "File Management" section of the *VA FileMan Advanced User Manual*.

Assumptions About the Reader

This manual is written with the assumption that the reader is familiar with the following:

- VistA computing environment
- VA FileMan data structures and terminology
- Microsoft Windows
- M programming language

It provides an overall explanation of configuring the Capacity Management Tools interface and the changes contained in Capacity Management Tools Version 2.0. However, no attempt is made to explain how the overall VistA programming system is integrated and maintained. Such methods and procedures are documented elsewhere. We suggest you look at the various VA home pages on the World Wide Web (WWW) for a general orientation to VistA. For example, go to the Veterans Health Administration (VHA) Office of Information (OI) Health Systems Design & Development (HSD&D) Home Page at the following Web address:

http://vista.med.va.gov/

Reference Materials

Readers who wish to learn more about the Capacity Management Tools software should consult the following:

- *Capacity Management Tools Installation Guide*
- *Capacity Management Tools Technical Manual*
- The Capacity Planning (CP) Services' Home Page at the following Web address:

  http://vista.med.va.gov/capman/default.htm

  This site contains additional information and documentation.

VistA documentation is made available online in Microsoft Word format and Adobe Acrobat Portable Document Format (PDF). The PDF documents *must* be read using the Adobe Acrobat Reader (i.e., ACROREAD.EXE), which is freely distributed by Adobe Systems Incorporated at the following Web address:

http://www.adobe.com/

VistA documentation can be downloaded from the Enterprise VistA Support (EVS) anonymous directories or from the Health Systems Design and Development (HSD&D) VistA Documentation Library (VDL) Web site:

http://www.va.gov/vdl/

For more information on the use of the Adobe Acrobat Reader, please refer to the *Adobe Acrobat Quick Guide* at the following Web address:

http://vista.med.va.gov/iss/acrobat/index.asp

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Chapter 1: Introduction

The Capacity Management Tools software is intended for use by Information Resource Management (IRM) staff responsible for the capacity planning functions at their site. The CM Tools software allows a site to collect Veterans Health Information Systems and Technology Architecture (VistA) Health Level Seven (HL7) workload information.

The CM Tools software is strongly dependent on the site to schedule and run the background task on a regular basis. Menus and options are provided locally at the site to allow IRM staff to accomplish and monitor this task.

The background task obtains VistA HL7 information from the site and automatically transfers this data via network mail (i.e., VistA MailMan) to the Capacity Planning National Database

The Veterans Health Administration (VHA) developed the CM Tools software in order to obtain more accurate information regarding the current and future system and VistA HL7 workload at VA sites (e.g., VA Medical Centers [VAMCs]).

The purpose of this manual is to provide information about the Capacity Management Tools software. This manual defines the use of this software as a resource to IRM staff responsible for capacity planning functions at the site. It also highlights the use of the options that are available at the site.

Chapter 2: CM Tools: Software Overview and Use

Functional Description

The Capacity Management Tools software application provides fully automated support tools developed by Capacity Planning Services. It entails the daily capture of the following data from participating sites:

- **VistA Health Level Seven (HL7) Workload Information—**VistA HL7 workload data is summarized and transmitted on a weekly basis.
- **VistA Timing Data—**Timing data is summarized and transmitted on a daily and weekly basis.

Data collected is automatically transferred via network mail (i.e., VistA MailMan) to the Capacity Planning National Database. The data is displayed graphically on the Capacity Planning Statistics Web page located at:

http://vista.med.va.gov/capman/Statistics/Default.htm

For more information on the Capacity Planning National Database and data display, please refer to the "Statistics and Projections" topic that follows in this chapter.

The IRM staff utilizes the options that are available at the site to manage the CM Tools software. IRM staff responsible for capacity planning tasks at the site can use these options to review VistA HL7 workload trends.

For more information on the CM Tools options, please refer to Chapter 3 "CM Tools: Options," in this manual.

The current version of the software is compatible with all current operating system platforms at VA sites and has minimal impact on IRM support staff.

Data Collection Process

Installing the CM Tools software creates the collection process mechanism and other necessary components of the software. The fully automated data collection mechanism entails capturing the following data:

- **VistA HL7 workload specifics at the site—**This data is gathered into a temporary ^TMP("KMPDH",$J) collection global.
- **Timing data at the site—**This data is gathered into the temporary ^KMPTMP("KMPDT") collection global.

The collection mechanism is continuously monitoring each process on the system while trapping system timing and VistA HL7 workload data.

On a nightly basis, the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] does the following:

- Moves the data within the ^TMP("KMPDH",$J) collection global. to the CM HL7 DATA file (#8973.1).
- Moves the data within the ^KMPTMP("KMPDT") collection global. to the CP TIMING file (#8973.2)

Upon completion, the data within both the ^TMP("KMPDH",$J) and ^KMPTMP("KMPDT") temporary collection globals is purged.

For more information on the CM Tools Background Driver option [KMPD BACKGROUND DRIVER], please refer to the "CM Tools Background Driver" topic in Chapter 3 "CM Tools: Options," in this manual.

Statistics and Projections

Every Sunday night, the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] monitors and trims (records deleted) the following files to ensure that the correct maximum number of day's data is maintained as determined by the appropriate CP parameters:

- CM HL7 DATA file (#8973.1)—The maximum amount of data collected is determined by the Purge HL7 Data After CP parameter.
- CP TIMING file (#8973.2)—The maximum amount of data collected is determined by the Purge Timing Data After CP parameter.

For more information on the CP parameters, please refer to the "Edit CP Parameters File" topic in Chapter 3, "CM Tools: Options," in this manual.

On a nightly basis, the CM Tools Background Driver option automatically compresses the information contained within the CP TIMING file (#8973.2) into daily statistics. These daily statistics are converted into an electronic mail message that is automatically transferred via network mail (i.e., VistA MailMan) and merged into a Capacity Planning National Database where this data is used for evaluation purposes.

Also, each Sunday night, the CM Tools Background Driver option automatically compresses the information contained within both the CM HL7 DATA (#8973.1) and CP TIMING (#8973.2) files into weekly statistics. These weekly statistics are converted into an electronic mail message that is automatically transferred via network mail (i.e., VistA MailMan) and merged into a Capacity Planning National Database where this data is used for evaluation purposes.

The data is also available on the Capacity Planning Web site at the following Web addresses:

- Statistics—Provides statistics for each listed site:

  http://vista.med.va.gov/capman/Statistics/Default.htm

- Projections—Provides data trends for each listed site:

  http://vista.med.va.gov/capman/TrendSetter/Default.htm

Software Management

The Capacity Management Tools software is managed by IRM staff through the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU], which is located under the Capacity Planning menu [XTCM MAIN]. The XTCM MAIN menu is found under the Eve menu and should be assigned to IRM staff member(s) who support(s) this software and other capacity management tasks.

For more information on CM Tools software management and maintenance, please refer to the *Capacity Management Tools Technical Manual*.

Chapter 3: CM Tools: Options

This chapter discusses the Capacity Management Tools software options.

Capacity Planning (Synonym: **CM**)	**[XTCM MAIN]**

The Capacity Planning menu [XTCM MAIN] is located under the Operations Management menu [XUSITEMGR], which is located under Kernel's Systems Manager Menu [Eve], as shown below:

```
Select Systems Manager Menu Option: Operations Management


          System Status
          Introductory text edit
          CPU/Service/User/Device Stats
   CM     Capacity Planning ...                                    [XTCM MAIN]
          Alert Management ...
          Alpha/Beta Test Option Usage Men
          Clean old Job Nodes in XUTL
          Delete Old (>14 d) Alerts
          Kernel Management Menu ...
          Post sign-in Text Edit
          RPC Broker Management Menu ...
          User Management Menu ...

Select Operations Management Option: Capacity Planning
```

The Capacity Planning menu is accessed via the Operations Management menu.

Figure 3-1: Accessing the Capacity Planning menu—User prompts

The Capacity Planning menu holds all the currently available capacity planning options. The XTCM MAIN menu may be assigned to the IRM staff member(s) who support(s) this software and other capacity planning tasks.

The Capacity Planning menu contains the following options:

```
Select Operations Management Option: Capacity Planning


   CPG    Capacity Planning Mail Group Edit                  [KMP MAIL GROUP EDIT]
   RUM    RUM Manager Menu ...                            [KMPR RUM MANAGER MENU]
   TLS    CP Tools Manager Menu ...                    [KMPD CM TOOLS MANAGER MENU]
   VPM    VAX/ALPHA Capacity Management ...                          [XUCM MAIN]
          Move Host File to Mailman                          [XTCM DISK2MAIL]
          Response Time Log Menu ...                                 [XURTLM].

Select Capacity Planning Option:
```

Figure 3-2: Capacity Planning—Menu option

The Capacity Planning menu-related options that will be discussed in greater detail in the topics that follow include the following:

- Capacity Planning Mail Group Edit option
- CP Tools Manager Menu and subordinate options

For more information on the RUM Manger Menu [KMPR RUM MANAGER MENU], please refer to the *Resource Usage Monitor (RUM) User Manual*.

For more information on the VAX/ALPHA Capacity Management [XUCM MAIN], Move Host File to Mailman [XTCM DISK2MAIL], and Response Time Log Menu [XURTLM] menus/options, please refer to the *Kernel Toolkit User Manual*.

Capacity Planning Mail Group Edit (Synonym: **CPG**)	**[KMP MAIL GROUP EDIT]**

The Capacity Planning Mail Group Edit option [KMP MAIL GROUP EDIT] is located on the Capacity Planning menu [XTCM MAIN] (Figure 3-2). It is used to edit the KMP-CAPMAN mail group. The KMP-CAPMAN mail group is defined with the installation of the CM Tools software.

The following example shows the prompts and user responses for the Capacity Planning Mail Group Edit option:

```
Select Capacity Planning Option: Capacity Planning Mail Group Edit

                      Edit Capacity Planning Mail Group

NAME: KMP-CAPMAN
Select MEMBER: SEPIA,GURBIR// ?
    Answer with MEMBER
   Choose from:
   SEPIA,GURBIR
   BLUE,THOMAS E

        You may enter a new MEMBER, if you wish
        Enter a local user who should receive mail addressed to this group.
        User must have an access code and a mailbox.

 Answer with NEW PERSON NAME, or INITIAL, or SSN, or VERIFY CODE, or
     NICK NAME, or SERVICE/SECTION, or DEA#, or ALIAS
 Do you want the entire NEW PERSON List? n <Enter>  (No)
Select MEMBER: SEPIA,GURBIR// <Enter>
  TYPE: CC// ??
        This field indicates what type of recipient this is.

        If this field has nothing in it, it indicates that this recipient is
        a primary recipient, and may reply.

        CC:  indicates that the recipient is being sent a copy, but is not the
        primary recipient.  The recipient may reply.

        INFO: indicates that the recipient may not reply to the message; the
        message is being transmitted to the recipient for information purposes
        only.

     Choose from:
       C        CC
       I        INFO
  TYPE: CC// <Enter>
Select MEMBER: <Enter>
DESCRIPTION:
This mail group will receive messages for all Capacity Planning software
(i.e., CM Tools, SAGG, RUM).

  Edit? NO// <Enter>
TYPE: public// ??
        The type of mail group determines who can send mail to it.
        Provided there are no AUTHORIZED SENDERS specified, anyone can send mail
        to a public group and only its members can send mail to a private group.
        If there are AUTHORIZED SENDERS specified, only those users can address
        the group.

     Choose from:
       PU       public
       PR       private
TYPE: public// <Enter>
ORGANIZER: BLUE,THOMAS E// <Enter>
COORDINATOR: BLUE,THOMAS E// <Enter>
Select AUTHORIZED SENDER: <Enter>
```

Enter users to the KMP-CAPMAN mail group. These mail group members (e.g., IRM personnel) will receive messages from Capacity Planning-related software (e.g., CM Tools).

Indicate whether or not the mail group member is a primary recipient.

Choose whether or not the mail group is public or private.

Choose the mail group organizer and coordinator. The coordinator is responsible for maintaining the membership of the mail group. Also, enter any authorized senders.

```
ALLOW SELF ENROLLMENT?: NO// ?
     If users may join this group by themselves, say "YES"
     Choose from:
       y        YES
       n        NO
ALLOW SELF ENROLLMENT?: NO// <Enter>
Select MEMBER GROUP NAME: ?
        You may enter a new MEMBER GROUPS, if you wish
        If you would like another mail group to be a member of this one enter
        a partial match to its name.
        A mail group may not be a member of itself.

 Answer with MAIL GROUP NAME
 Do you want the entire MAIL GROUP List? n <Enter>  (No)
Select MEMBER GROUP NAME: <Enter>
Select REMOTE MEMBER: ?
        You may enter a new MEMBERS - REMOTE, if you wish
        Enter a remote address (name@domain) or local device (D.device or
        H.device) or local server (S.server).

Select REMOTE MEMBER: <Enter>
Select DISTRIBUTION LIST: ?
        You may enter a new DISTRIBUTION LIST, if you wish

    Answer with DISTRIBUTION LIST NAME
   Choose from:
   486 TEAM
   G.IMG@RD4.VA.GOV
   GUESS
   IRM
   IRM
   K7 TESTING
   K7.1 DISTRIBUTION
   SHARED

        You may enter a new DISTRIBUTION LIST, if you wish
        NAME MUST BE 3-30 CHARACTERS, NOT NUMERIC OR STARTING WITH
        PUNCTUATION

Select DISTRIBUTION LIST: <Enter>
Select FAX RECIPIENT: ?
        You may enter a new FAX RECIPIENT, if you wish
        Enter the fax recipient who should receive faxes sent to this mail
        group.

  Pointed-to File does not exist!
Select FAX RECIPIENT: <Enter>
Select FAX GROUP: ?
        You may enter a new FAX GROUP, if you wish
        Enter the fax group which should receive faxes sent to this mail
        group.
        Group must be public or user must be (surrogate of) creator of group.

Select FAX GROUP: <Enter>
```

This series of prompts is used to enter any additional remote users, mail groups, distribution lists, or FAX recipients/groups as members to the KMP-CAPMAN mail group.

Figure 3-3: Capacity Planning Mail Group Edit option—User prompts

CP Tools Manager Menu (Synonym: **TLS**)	**[KMPD CM TOOLS MANAGER MENU]**

The CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU] is located on the Capacity Planning menu [XTCM MAIN] (Figure 3-2). It contains the following options:

```
Select Capacity Planning Option: CP Tools Manager Menu


   STA    Check CM Tools Environment                          [KMPD STATUS]
   SST    Start/Stop Timing Collection                  [KMPD TMG START/STOP]
   PRM    Edit CP Parameters File                           [KMPD PARAM EDIT]
   TMT    Timing Monitor                                  [KMPD TMG MONITOR]
   RPT    CP Tools Reports ...                      [KMPD CM TOOLS REPORTS]
```

Figure 3-4: CP Tools Manager Menu—Menu option

Each of these options is discussed in greater detail in the topics that follow.

Check CM Tools Environment (Synonym: **STA**)	**[KMPD STATUS]**

The Check CM Tools Environment option [KMPD STATUS] is located on the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU] (Figure 3-4). It displays the current status of the Capacity Management Tools software.

This option displays the following information (see Figure 3-6 and Figure 3-7):

- **CM TOOLS BACKGROUND DRIVER—**Indicates the option name of the CM Tools Background Driver [KMPD BACKGROUND DRIVER].
- **QUEUED TO RUN AT—**Indicates the date that the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] is scheduled to first run at the site *and* the regularly scheduled time when the CM Tools Background Driver option should run at a site. The job will run at this scheduled time depending on the Rescheduling Frequency indicated.

  The installation of the CM Tools software creates and sets this field automatically. It does the same thing as TaskMan's Schedule/Unschedule Option, which saves the installer the job of having to set up the Background Driver job later.

- **RESCHEDULING FREQUENCY—**Indicates the frequency at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER)

Capacity Planning Services *strongly* recommends that the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] be scheduled to run every day at 1:30 a.m., because this background driver is the main mechanism by which the following sub-globals are purged nightly:

- **^KMPD(8973.1)—CM HL7 DATA file (#8973.1): Records are purged as prescribed by the Purge HL7 Data After CP parameter, which is stored in the HL7 WEEKS TO KEEP DATA field (#3.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].**
- **^KMPD(8973.2)—CP TIMING file (#8973.2): Records are purged as prescribed by the Purge Timing Data After CP parameter, which is stored in the TIMING WEEKS TO KEEP DATA field (#4.11 in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].**

Modification of the frequency and time may have adverse effects on the size of the temporary ^KMPD(8973.1) and ^KMPD(8973.2) sub-globals and on the number of entries within the CM HL7 DATA file (#8973.1) and CP TIMING (#8973.2) files.

- **TASK ID—**This is the TaskMan task ID scheduled to run the Background Driver job.
- **QUEUED BY—**This is the person who schedules the Background Driver job to run via TaskMan.

The installation of the CM Tools software creates and sets this field automatically. It sets it to the name of the person doing the installation of the CM Tools V. 2.0 software.

- **HL7 DAILY BACKGROUND LAST START—**Indicates the most recent date and time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] last daily run started HL7 data collection.
- **HL7 DAILY BACKGROUND LAST STOP—**Indicates the most recent date and time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] last daily run stopped HL7 data collection.
- **HL7 DAILY BACKGROUND TOTAL TIME—**Indicates the total time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] took in its most recent daily run of HL7 data collection.
- **HL7 WEEKLY BACKGROUND LAST START—**Indicates the most recent date and time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] last weekly run started HL7 data collection.
- **HL7 WEEKLY BACKGROUND LAST STOP—**Indicates the most recent date and time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] last weekly run stopped HL7 data collection.
- **HL7 WEEKLY BACKGROUND TOTAL TIME—**Indicates the total time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] took in its most recent weekly run of HL7 data collection.
- **HL7 PURGE DATA AFTER—**Indicates the total time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] should purge HL7 data in the CM HL7 DATA file (#8973.1).

- **TIMING DAILY BACKGROUND LAST START—**Indicates the most recent date and time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] last daily run started Timing data collection.
- **TIMING DAILY BACKGROUND LAST STOP—**Indicates the most recent date and time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] last daily run stopped Timing data collection.
- **TIMING DAILY BACKGROUND TOTAL TIME—**Indicates the total time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] took in its most recent daily run of Timing data collection.
- **TIMING WEEKLY BACKGROUND LAST START—**Indicates the most recent date and time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] last weekly run started Timing data collection.
- **TIMING WEEKLY BACKGROUND LAST STOP—**Indicates the most recent date and time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] last weekly run stopped Timing data collection.
- **TIMING WEEKLY BACKGROUND TOTAL TIME—**Indicates the total time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] took in its most recent weekly run of Timing data collection.
- **TIMING PURGE DATA AFTER—**Indicates the total time at which the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] should purge Timing data in the CP TIMING file (#8973.2).

This option also displays the number of entries within the following files (see Figure 3-7):

- CM HL7 DATA file (#8973.1)
- CP TIMING file (#8973.2)

For more information on these files, please refer to the Chapter 3, "Files," in the *Capacity Management Tools Technical Manual*.

The Check CM Tools Environment option [KMPD STATUS] checks to ensure that the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] has been scheduled to run every night (see Figure 3-6).

If the Check CM Tools Environment option determines that the background task has *not* been scheduled properly, the Check CM Tools Environment option will ask to queue the background task to run every night at 1:30 a.m., as shown below:

```
   CPG    Capacity Planning Mail Group Edit
   RUM    RUM Manager Menu ...
   TLS    CP Tools Manager Menu ...
   VPM    VAX/ALPHA Capacity Management ...
          Move Host File to Mailman
          Response Time Log Menu ...

Select Capacity Planning Option: CP Tools Manager Menu


   STA    Check CM Tools Environment
   SST    Start/Stop Timing Collection
   PRM    Edit CP Parameters File
   TMT    Timing Monitor
   RPT    CP Tools Reports ...

Select CP Tools Manager Menu Option: Check CM Tools Environment


                                CM Tools v2.0
                                   **1,2**

     The 'CM Tools Background Driver' [KMPD BACKGROUND DRIVER] is not scheduled
     to run!


Do you want to queue this option to run each night at 1:30am? YES// <Enter>
```

Figure 3-5: Running the Check CM Tools Environment option—User prompts/Report, Background Driver job has *not* been scheduled

Selecting "**YES**" after the "Do you want to queue this option to run each night at 1:30am? YES//" prompt will cause the KMPD BACKGROUND DRIVER option to be entered into the OPTION SCHEDULING file (#19.2) with a QUEUED TO RUN AT WHAT TIME field entry of "**Tomorrow @ 1:30 a.m.**" and a RESCHEDULING FREQUENCY field (#6) entry of "**1D**" (i.e., every day), see Figure 3-6.

```
                          CM Tools v2.0

   CM Tools Background Driver..: KMPD BACKGROUND DRIVER
   QUEUED TO RUN AT............: Mar 19, 2004@01:30
   RESCHEDULING FREQUENCY......: 1D
   TASK ID.....................: 2229711
   QUEUED BY...................: SEPIA,GURBIR  (Active)

   Hl7 Dly Bckgrnd Last Start..: Mar 18, 2004@01:30:01
   HL7 Dly Bckgrnd Last Stop...: Mar 18, 2004@01:30:01
   HL7 Dly Bkgrnd Total Time...:
   HL7 Wkly Backgrnd Last Start: Mar 14, 2004@01:30
   HL7 Wkly Bckgrnd Last Stop..: Mar 14, 2004@01:30
   HL7 Wkly Bckgrnd Total Time.:
   HL7 Purge Data After........: 2 weeks

   TMG Collection Status.......: Running
   TMG Dly Bckgrnd Last Start..: Mar 18, 2004@01:30:01
   TMG Dly Bckgrnd Last Stop...: Mar 18, 2004@01:30:01
   TMG Dly Bkgrnd Total Time...:
   TMG Wkly Backgrnd Last Start: Mar 18, 2004@01:30:01
_____________________________________________________________________________
[Q]uit, [N]ext Screen:                                        Page 1 of 2
```

Figure 3-6: Check CM Tools Environment option (1 of 2)—Report, Background Driver job has been scheduled

After entering "N" and pressing the Enter key the following screen is displayed:

```
                          CM Tools v2.0

   TMG Wkly Bckgrnd Last Stop..: Mar 18, 2004@01:30:01
   TMG Wkly Bckgrnd Total Time.:
   TMG Purge Data After........: 4 weeks

                                  # of     Oldest     Recent
   File                         Entries    Date       Date
   -------------------------    -------   -------   -------
   8973.1 - CM HL7 DATA           2,685   03/10/04   03/18/04
   8973.2 - CP TIMING           448,167   02/20/04   03/18/04


   CM TOOLS routines........: 45 Routines - No Problems

   Node/CPU Data............: ISC6A1  AlphaServer ES40 (4)
                              ISC6A2  AlphaServer ES40 (4)


     HL7 = Health Level Seven
     TMG = Timing Data
_____________________________________________________________________________
[Q]uit, [P]revious Screen:                                    Page 2 of 2
```

These files are populated when the data collection is started.

Figure 3-7: Check CM Tools Environment option (2 of 2)—Report

In addition, this option also indicates the number of entries in the CM HL7 DATA (#8973.1) and CP TIMING (#8973.2) files.

Start/Stop Timing Collection (Synonym: **SST**)	**[KMPD TMG START/STOP]**

The Start/Stop Timing Collection option [KMPD TMG START/STOP] is located under the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU]. It is used to start/stop the CM Tools collection routines to start/stop collecting VistA HL7 workload data.

This option requires that CPRS Patch OR*3.0*209 be installed in order to start collecting timing data and enable the data collection and report-related CM Tools software options..

Users should first invoke the Check CM Tools Environment option [KMPD STATUS] to ensure that the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] is scheduled to run every day at 1:30 a.m.

For more information on the Check CM Tools Environment option, please refer to the "Check CM Tools Environment" topic in this chapter.

If the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] is *not* shown as being scheduled to run in the future, use TaskMan's Schedule/Unschedule Options option [XUTM SCHEDULE], located under the Taskman Management menu [XUTM MGR], to schedule the KMPD BACKGROUND DRIVER option to run every day at 1:30 a.m.
)

Capacity Planning Services *strongly* recommends that the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] be scheduled to run every day at 1:30 a.m., because this background driver is the main mechanism by which the following sub-globals are purged nightly:

- **^KMPD(8973.1)—CM HL7 DATA file (#8973.1): Records are purged as prescribed by the Purge HL7 Data After CP parameter, which is stored in the HL7 WEEKS TO KEEP DATA field (#3.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].**
- **^KMPD(8973.2)—CP TIMING file (#8973.2): Records are purged as prescribed by the Purge Timing Data After CP parameter, which is stored in the TIMING WEEKS TO KEEP DATA field (#4.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].**

Modification of the frequency and time may have adverse effects on the size of the temporary ^KMPD(8973.1) and ^KMPD(8973.2) sub-globals and on the number of entries within the CM HL7 DATA file (#8973.1) and CP TIMING (#8973.2) files.

Starting:

To start the CM Tools collection, do the following:

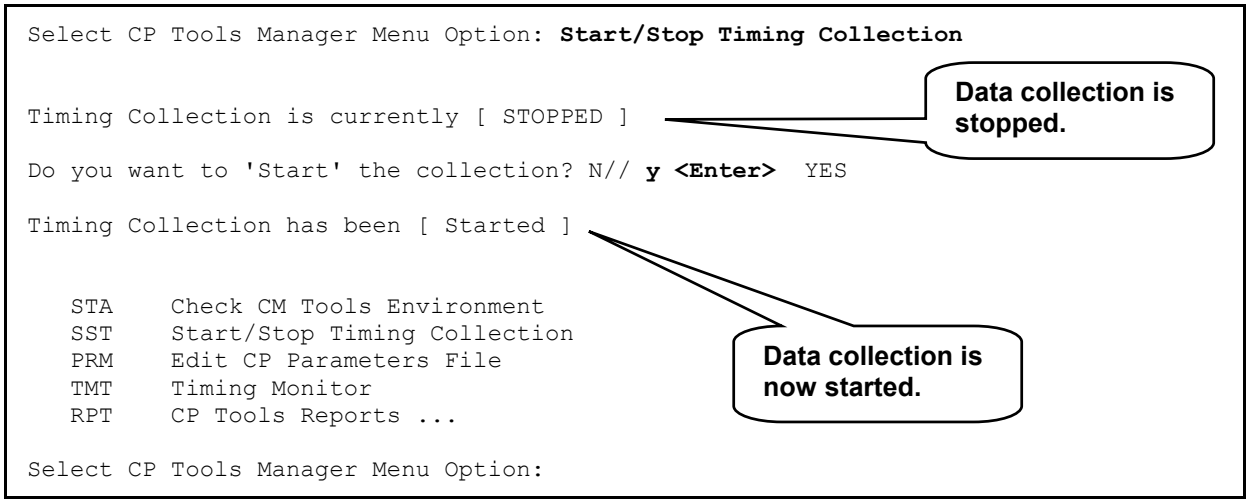

Figure 3-8: Starting timing collection—User prompts

Stopping:

To stop the CM Tools collection, do the following:

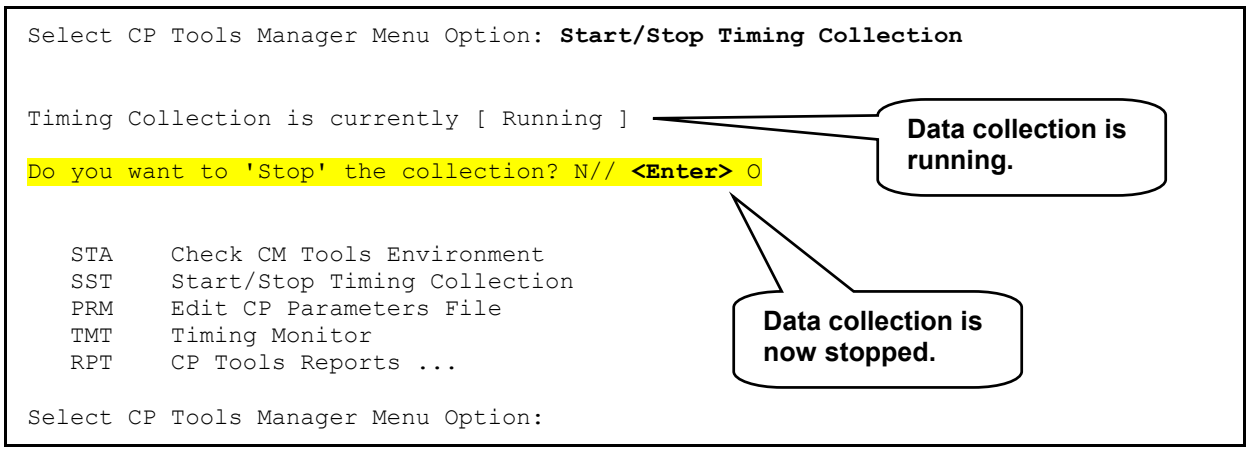

Figure 3-9: Stopping timing collection—User prompts

Edit CP Parameters File (Synonym: **PRM**)	**[KMPD PARAM EDIT]**

The Edit CP Parameters File option [KMPD PARAM EDIT] is located on the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU] (Figure 3-4). It allows editing of the Capacity Planning (CP) parameters in the CP PARAMETERS file (#8973).

For more information on the Check CM Tools Environment option, please refer to the "Check CM Tools Environment" topic in this chapter.

This option allows users to edit the following parameters:

Parameter	Field Name (Number) (in File #8973)	Description
Purge HL7 Data After	HL7 WEEKS TO KEEP DATA field (#3.11)	This is the number of weeks that HL7 data will be retained in the CM HL7 DATA file (#8973.1) before purging. Enter a whole number between 2 and 19 (i.e., 2 weeks minimum and 19 weeks maximum). However, it is recommended that 2 weeks of data be retained.
Purge Timing Data After	TIMING WEEKS TO KEEP DATA field (#4.11)	This is the number of weeks that Timing data will be retained in the CP TIMING file (#8973.2) before purging. Enter a whole number between 2 and 40 (i.e., 2 weeks minimum and 40 weeks maximum). However, it is recommended that 4 weeks of data be retained.
Purge RUM Data After	RUM WEEKS TO KEEP DATA field (#2.11)	This is the number of weeks that RUM data will be retained in the RESOURCE USAGE MONITOR file (#8971.1)) before purging. Enter a whole number between 2 and 20 (i.e., 2 weeks minimum and 20 weeks maximum). However, it is recommended that 2 weeks of data be retained.
Timing Monitor Alert - Seconds	MONITOR ALERT - SECONDS field (#19.02)	When the Timing Monitor is running, if the average time-to-load a CPRS Coversheet exceeds this value, an alert will appear on the Timing Monitor screen. Enter a whole number between 10 and 999.
Timing Monitor Update Rate - Min	MONITOR UPDATE RATE - MINUTES field (#19.01)	When the Timing Monitor is running, this is the number of minutes between automatic updates. Enter a whole number between 5 and 60.

Table 3-1: CP parameters/fields, stored in the CP PARAMETERS file (#8973)

The following examples (see Figure 3-10, Figure 3-11, and Figure 3-12) show the prompts and user responses for the Edit CP Parameters File option:

```
   CPG    Capacity Planning Mail Group Edit
   RUM    RUM Manager Menu ...
   TLS    CP Tools Manager Menu ...
   VPM    VAX/ALPHA Capacity Management ...
          Move Host File to Mailman
          Response Time Log Menu ...

Select Capacity Planning Option: CP Tools Manager Menu


   STA    Check CM Tools Environment
   SST    Start/Stop Timing Collection
   PRM    Edit CP Parameters File
   TMT    Timing Monitor
   RPT    CP Tools Reports ...

Select CP Tools Manager Menu Option: Edit CP Parameters File
```

After selecting the option and pressing the Enter key, the user is automatically placed into a ScreenMan form, (see Figure 3-11 and Figure 3-12).

Figure 3-10: Running the Edit CP Parameters option—User prompts

After selecting the Edit CP Parameters File option, the user is automatically placed into the following ScreenMan form:

```
                        CM Tools Parameters Edit                    Page 1
                        N. FLORIDA/S. GEORGIA HCS

Current Version: 2.0             Version Installed: MAR 11,2004@1
  Current Patch:                   Patch Installed: MAR 11,2004@10:

   Purge HL7 Data After: 2   Weeks   Timing Monitor Update Rate - Min:
Purge Timing Data after: 4   Weeks     Timing Monitor Alert - Seconds:
   Purge RUM Data After:     Weeks

_____________________________________________________________________________
Exit     Save     Refresh

Enter a command or '^' followed by a caption to jump to a specific field.

COMMAND:                                  Press <PF1>H for help     Insert
```

Site name from INSTITUTION file (#4)

CP parameters default values.

Figure 3-11: Edit CP Parameters File option (ScreenMan)—User Prompts (*default* values)

The following figure shows the parameters after the user has entered new values:

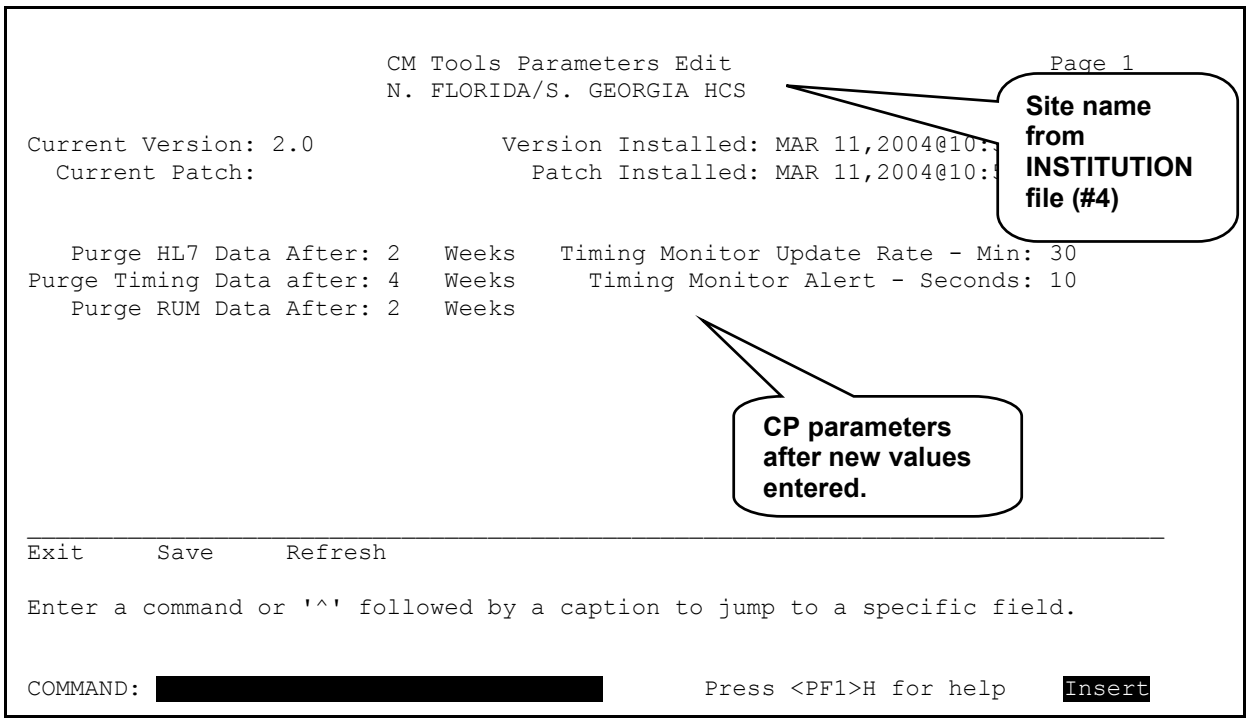

Figure 3-12: Edit CP Parameters File option (ScreenMan)—User Prompts (*updated* values)

In this example (Figure 3-12), the user has made entries for each parameter. In most cases, the recommended value was entered (see Table 3-1). Specifically, the user made the following entries:

- Purge HL7 Data After: **2** weeks (default)
- Purge Timing Data after: **4** weeks (default)
- Purge RUM Data After: **2** weeks (recommended)
- Timing Monitor Update Rate - Min: **30**
- Timing Monitor Alert - Seconds: **10**

After making the entries, the user saved and exited the screen.

Timing Monitor (Synonym: **TMT**)	**[KMPD TMG MONITOR]**

The Timing Monitor option [KMPD TMG MONITOR] is located on the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU] (Figure 3-4). This option updates itself automatically and displays the average number of seconds it takes Computerized Patient record System (CPRS) coversheets to load in a period of time. Data is displayed in a bar graph. The x-axis of the bar graph indicates the hours of the day (from 0 up to 24) and the y-axis indicates the average number of seconds it takes to load CPRS coversheets. This option can be left running on a terminal continuously collecting data.

The Timing Monitor displays data for each hour of the day and each new hour as it comes up (i.e., 0 – 24 hours). It updates the data according to the value in the MONITOR UPDATE RATE - MINUTES field (#19.01) in the CP PARAMETERS file (#8973). If there is no entry in Field #19.01, the default is every 10 minutes. The CPRS coversheet load data is displayed in a bar graph for each hour the Timing Monitor is running. If the Timing Monitor is run continuously, the cycle repeats every 24 hours overlaying/replacing previous data and adjusting the bar graph accordingly. The bar graph is also adjusted for the latest information gathered based on the value in the MONITOR UPDATE RATE - MINUTES field (#19.01) in the CP PARAMETERS file (#8973).

The Timing Monitor also displays an Alert Message near the bottom of the screen if the average number of seconds to load a CPRS coversheet exceeds the value of the MONITOR ALERT - SECONDS field (#19.02) in the CP PARAMETERS file (#8973). If there is no entry in Field #19.02, the default is 30 seconds. Both of these parameters can be edited using the Edit CP Parameters File option [KMPD PARAM EDIT].

```
   STA    Check CM Tools Environment
   SST    Start/Stop Timing Collection
   PRM    Edit CP Parameters File
   TMT    Timing Monitor
   RPT    CP Tools Reports ...

Select CP Tools Manager Menu Option: tmt <Enter>  Timing Monitor


                          Timing Data Monitor

       *** There is currently no data in global ^KMPKMPUTMP("KMPDT","ORWCV") ***
```

Figure 3-13: Running the Timing Monitor option—User prompts/Report, *no* data

```
                          Timing Data Monitor


       This option displays CPRS Coversheet time-to-load data, as a
       bar graph, for the current day.  This option can be left
       running on a terminal (if desired).  The monitor is updated
       every 10 minutes (site configurable through the [KMPD PARAM
       EDIT] Edit CP Parameters File option), and displays current
       average time-to-load data starting at midnight.  An alarm
       message is displayed if the average time-to-load exceeds 30
       seconds (site configurable through the [KMPD PARAM EDIT] Edit

       CP Parameters File option).


Continue? YES// <Enter>

Compiling timing stats.......
```

Figure 3-14: Running the Timing Monitor option—User prompts, *with* data

The following figure (Figure 3-15) shows a snapshot in time of average CPRS coversheet loads at a site over a 13-hour time span. The data is displayed in a bar graph format (bar graph colors have been enhanced for clarity in the display):

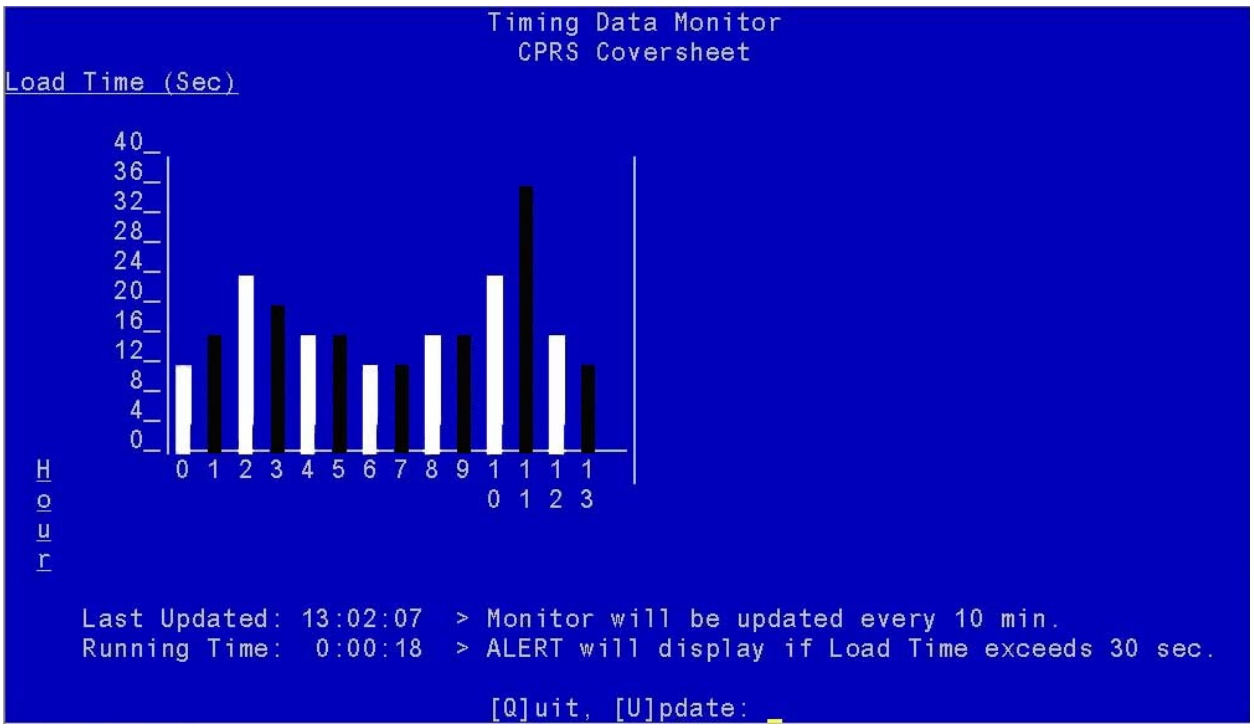

Figure 3-15: Running the Timing Monitor option—Report, *no* alert
(bar graph colors have been enhanced for display purposes only)

In this example (Figure 3-15), the Timing Monitor option has been running for 13+ hours at a site. Thus, the sample graph displays the average CPRS coversheet loads from midnight (0 hour) to 1:00 p.m. (13 hour). If the Timing Monitor is left running, eventually a full 24-hour range of data would be displayed.

For this example, the site has set the Timing Monitor Alert - Seconds parameter (i.e., MONITOR ALERT - SECONDS field [#19.02] in the CP PARAMETERS file [#8973]) to 30 seconds. The graph shows that the average CPRS coversheet loads did not exceed the 30 second threshold except at the 11th hour. During the 11th hour the average CPRS coversheet load was approximately 36 seconds. If the user had checked the monitor at the 11th hour he/she would have gotten an alert message displayed at the bottom of the screen.

For an example of an alert message due to coversheet loads exceeding the Timing Monitor Alert - Seconds parameter, please refer to Figure 3-16.

Sites can set the Timing Monitor Alert - Seconds parameter from 10 to 999 seconds via the MONITOR ALERT - SECONDS field (#19.02) in the CP PARAMETERS file (#8973).

To quit/stop the Timing Monitor, enter a "**Q**" after the "[Q]uit [U]pdate" prompt. To refresh the data/bar graph, enter a "**U**" after the "[Q]uit [U]pdate" prompt.

For more information on the CP parameters, please refer to the "Edit CP Parameters File" topic and Table 3-1 in this chapter.

The following example shows a sample report with an alert message displayed:

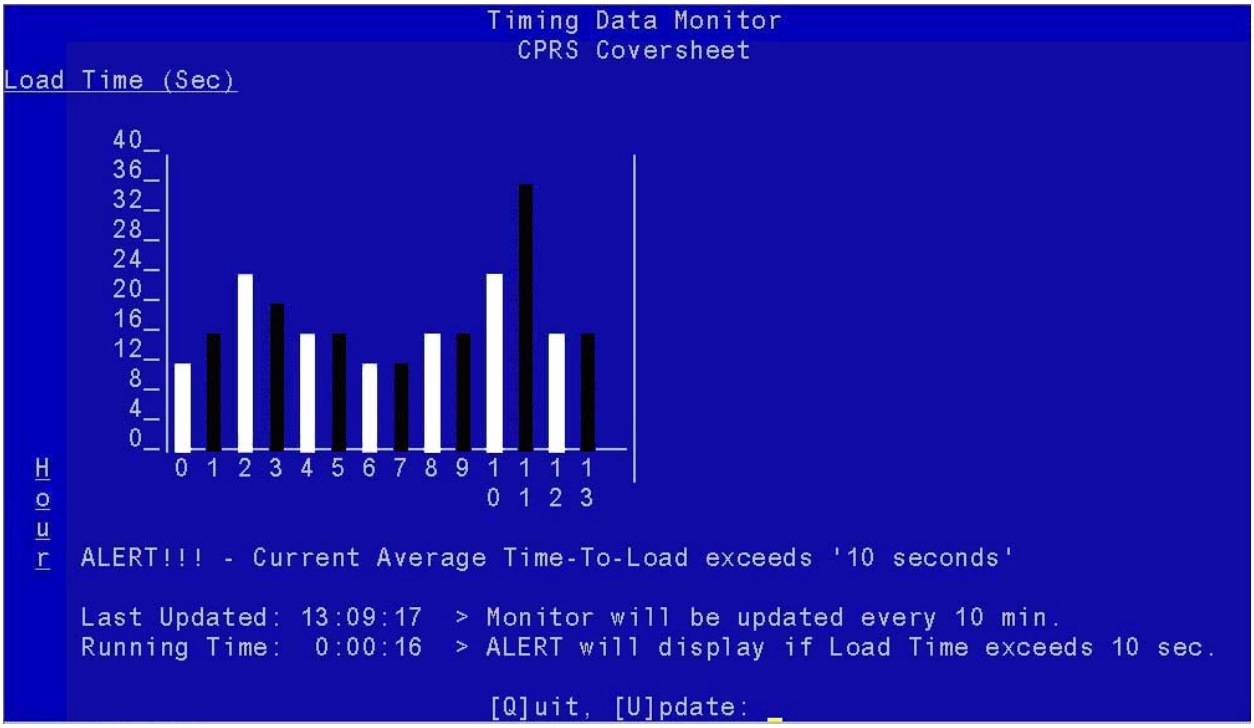

Figure 3-16: Running the Timing Monitor option—Report, *with* alert

In this example (Figure 3-16), the Timing Monitor option has been running for 13+ hours at a site. Thus, the sample graph displays the average CPRS coversheet loads from midnight (0 hour) to 1:00 p.m. (13 hour).

For this example, the site has set the Timing Monitor Alert - Seconds parameter (i.e., MONITOR ALERT - SECONDS field [#19.02] in the CP PARAMETERS file [#8973]) to 10 seconds. The graph shows that the average CPRS coversheet loads exceeded the 10 second threshold during the 1st through the 13th hour. Since the user is checking the monitor at the 13th hour, where the CPRS coversheet load took approximately 15 seconds, he/she saw the alert message displayed at the bottom of the screen:

ALERT!!! – Current Average Time-To-Load exceeds '10 seconds'

Sites can set the Timing Monitor Alert - Seconds parameter from 10 to 999 seconds via the MONITOR ALERT - SECONDS field (#19.02) in the CP PARAMETERS file (#8973).

For more information on the CP parameters, please refer to the "Edit CP Parameters File" topic and Table 3-1 in this chapter.

CP Tools Reports (Synonym: **RPT**)	**[KMPD CM TOOLS REPORTS]**

The CP Tools Reports menu [KMPD CM TOOLS REPORTS] is available on the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU], as shown below:

```
Select CP Tools Manager Menu Option: CP Tools Reports

   TMG    Timing Reports ...

Select CP Tools Reports Option:
```

Figure 3-17: Accessing the CP Tools Reports—Menu option

The CP Tools Reports menu [KMPD CM TOOLS REPORTS] contains a report option that generates report information for a variety of Computerized Patient Record System (CPRS) event statistics accumulated within the CP TIMING file (#8973.2).

The CP Tools Reports menu contains the following sub-menu option:

```
   TMG    Timing Reports ...                                    [KMPD TMG REPORTS]
```

Figure 3-18: CP Tools Reports—Menu option

This sub-menu option is discussed in greater detail in the topic that follows.

Timing Reports (Synonym: **TMG**)	**[KMPD TMG REPORTS]**

The Timing Reports menu [KMPD TMG REPORTS] is located under the CP Tools Reports menu [KMPD CM TOOLS REPORTS]. It contains the following report options:

```
Select CP Tools Reports Option: Timing Reports


   AVD    Average Daily Coversheet Load                          [KMPD TMG AVG TTL]
   AVH    Average Hourly Coversheet Load                        [KMPD TMG HRLY TTL]
   DTD    Detailed Daily Coversheet Load                  [KMPD TMG DLY TTL DETAIL]
   DTH    Detailed Hourly Coversheet Load                [KMPD TMG HRLY TTL DETAIL]
   TAL    Threshold Alert                                      [KMPD TMG TTL ALERT]
   RTA    Real-Time Threshold Alert                         [KMPD TMG TTL ALERT RT]
   RAV    Real-Time Average Hourly Coversheet Load           [KMPD TMG HRLY TTL RT]

Select Timing Reports Option:
```

Figure 3-19: Timing Reports—Menu option

The options on this menu generate report information for a variety of Computerized Patient Record System (CPRS) event statistics accumulated within the CP TIMING file (#8973.2). These options report on the CPRS coversheet load times, which is the main CPRS page. This main page is a screen of the CPRS patient chart that displays an overview of the patient's record.

Each of these options is discussed in greater detail in the topics that follow.

Average Daily Coversheet Load (Synonym: **AVD**)	**[KMPD TMG AVG TTL]**

The Average Daily Coversheet Load option [KMPD TMG AVG TTL] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the daily average time-to-load value for the coversheet at a site. Average time-to-load values are given for either daily prime time or non-prime time periods.

The following example shows the prompts and user responses for the Average Daily Coversheet Load option:

```
Select Timing Reports Option: Average Daily Coversheet Load


              Average Coversheet Time-to-Load (TTL) Report

       This report displays the daily average time-to-load value for
       the coversheet at this site.  Average time-to-load values are
       given for either daily prime time or non-prime time periods.


Select End Date:  (9/20/2003 - 10/19/2003): Oct 19, 2003// <Enter>  (OCT 19, 2003)
Select # of Days Review:  (1-30): 7// <Enter>

     Select one of the following:

          1         Prime Time
          2         Non-Prime Time


Select Time Frame: 1// <Enter>  Prime Time

Device: HOME// <Enter>  TELNET DEVICE

Compiling timing stats.....................
.............
```

Here the user chose the end date and number of days data upon which to report up to that end date.

Prime time is 8 a.m. to 5 p.m. Monday through Friday, *excluding* holidays. Non-prime time hours are all other hours (i.e., weekends, nights and holidays).

Figure 3-20: Average Daily Coversheet Load option—User prompts

The following example shows the actual report generated from the Average Daily Coversheet Load option:

```
                  Average Coversheet Time-to-Load (TTL) Report
                                  Prime Time
                           Oct 13, 2003 - Oct 19, 2003        Printed: 10/20/03

            |---------------Seconds---------------|
Date        Average TTL   Minimum TTL   Maximum TTL   # of CV Loads
-------------------------------------------------------------------------------
10/13/03              0             0             0              0
10/14/03             14             3           500         16,465
10/15/03             14             3           615         18,674
10/16/03             14             3           288         18,123
10/17/03             12             3           436         16,955
10/18/03              0             0             0              0
10/19/03              0             0             0              0

            Incomplete:   0

  CV  = Coversheet
  TTL = Time-to-Load

Press RETURN to continue:
```

Figure 3-21: Average Daily Coversheet Load option—Report

This report provides the following data regarding coversheet loads at a site for a specified number of days:

- Date—Specific day that the coversheet load began.
- Average TTL—Average time-to-load (in seconds) for each day.
- Minimum TTL—Minimum time-to-load (in seconds) for each day.
- Maximum TTL—Maximum time-to-load (in seconds) for each day.
- # of CV Loads—Total number of coversheet loads for each day.
- Incomplete—Total number of coversheets where the report option was unable to determine the coversheet end load time, so it was unable to calculate the time to load the coversheet.

Sites can use this report to track average coversheet load times. It also indicates the shortest and longest coversheets time-to-load. If some of the longer load times are extreme, sites can run any of the other Timing Report options to find out more specific information. For example, sites can then run the Detailed Hourly Coversheet Load report option [KMPD TMG HRLY TTL DETAIL] to see how many loads were over 90 seconds, etc, and also run the Threshold Alert report option [KMPD TMG TTL ALERT] to get a breakdown of which user/client/IP address had slow times.

For more information on the Detailed Hourly Coversheet Load report option [KMPD TMG HRLY TTL DETAIL], please refer to the "Detailed Hourly Coversheet Load" topic in this chapter.

For more information on the Threshold Alert report option [KMPD TMG TTL ALERT], please refer to the "Threshold Alert" topic in this chapter.

For this report, the user chose to report on the last 7 days of coversheet load data from 10/13/03 to 10/19/03. From the report, on 10/15/03, for example, there were a total of 18,674 coversheets loaded with an average time-to-load for each coversheet of 14 seconds. On that same day the shortest coversheet time-to-load took only 3 seconds and the longest coversheet time-to-load took 615 seconds (10 minutes and 15 seconds). Zeroes under the "Average TTL," "Minimum TTL," "Maximum TTL," and "# of CV Loads" columns indicates that the coversheets took less than one second to load (see report data for 10/13/03, 10/18/03, and 10/;19/03).

Average Hourly Coversheet Load (Synonym: **AVH**)	**[KMPD TMG HRLY TTL]**

The Average Hourly Coversheet Load option [KMPD TMG HRLY TTL] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the hourly average time-to-load value for the coversheet at a site over a 24-hour period.

The following example shows the prompts and user responses for the Average Hourly Coversheet Load option:

```
Select Timing Reports Option: Average Hourly Coversheet Load


               Hourly Coversheet Time-to-Load (TTL) Report

       This report displays the hourly average time-to-load value for
       the coversheet at this site over 24 hours.


Select End Date:  (9/20/2003 - 10/19/2003): Oct 19, 2003// <Enter>  (OCT 19, 2003)
Select # of Days Review:  (1-30): 1// <Enter>

Device: HOME// <Enter>  TELNET DEVICE

Compiling timing stats......
```

Here the user chose the end date and number of days data upon which to report hourly up to that end date.

Figure 3-22: Average Hourly Coversheet Load option—User prompts

The following example shows the actual report generated from the Average Hourly Coversheet Load option:

```
                  Hourly Coversheet Time-to-Load (TTL) Report
                          Oct 19, 2003 - Oct 19, 2003        Printed: 10/20/03

                     |---------------Seconds---------------|
Date         Hour    TTL Average   TTL Minimum   TTL Maximum   # of CV Loads
-------------------------------------------------------------------------------
10/19/03      00             14             6            79             52
              01             16             5            83             90
              02             16             5           100            131
              03             10             5            39             69
              04             26             5           150             77
              05             14             5            86             98
              06             13             5            65             77
              07             11             5            44            134
              08             10             4            42            167
              09              9             4            55            161
              10             10             4            53            254
              11             10             5            69            225
              12             11             4           166            210
              13              9             4            43            203
              14             12             4            59            245


Enter RETURN to continue or '^' to exit: <Enter>


                  Hourly Coversheet Time-to-Load (TTL) Report
                          Oct 19, 2003 - Oct 19, 2003        Printed: 10/20/03

                     |---------------Seconds---------------|
Date         Hour    TTL Average   TTL Minimum   TTL Maximum   # of CV Loads
-------------------------------------------------------------------------------
              15             11             4            60            213
              16             11             5            38            137
              17             10             5            67            217
              18             12             4            64            172
              19             11             5            58            154
              20             11             5            43            112
              21             13             5            72            139
              22             12             5            58             94
              23             12             5            58            132
                                                                   ----------
                                                                       3,563

            Incomplete:   0


  CV  = Coversheet
  TTL = Time-to-Load

Press RETURN to continue:
```

Hours are represented in military time:

00 = midnight
12 = noon
23 = 11:00 p.m.

Figure 3-23: Average Hourly Coversheet Load option—Report

This report provides the following data regarding coversheet loads at a site for each hour of the specified number of day(s):

- Date—Specific day that the coversheet load began.
- Hour—Specific hour that the coversheet load began (00 - 23).
- TTL Average—Average time-to-load (in seconds) for each hour of a day.
- TTL Minimum—Minimum time-to-load (in seconds) for each hour of a day.
- TTL Maximum—Maximum time-to-load (in seconds) for each hour of a day.
- # of CV Loads—Total number of coversheet loads for:
  - Each hour of the day.
  - Grand total for the entire day.
- Incomplete—Total number of coversheets where the report option was unable to determine the coversheet end load time, so it was unable to calculate the time to load the coversheet.

This report allows sites to identify times of the day when the most coversheet loads are taking place, and when the longest times to load are taking place. Sites can run any of the other Timing Report options to find out more specific information.

For this report, the user chose to report on 24 hours of coversheet load data for a single day, 10/19/03. From the report, at 12:00 p.m. to 12:59 p.m. on 10/19/03, for example, there were a total of 210 coversheets loaded with an average time-to-load for each coversheet of 11 seconds. At that same hour the shortest coversheet time-to-load took only 4 seconds and the longest coversheet time-to-load took 166 seconds (2 minutes and 46 seconds).

Detailed Daily Coversheet Load (Synonym: **DTD**)	**[KMPD TMG DLY TTL DETAIL]**

The Detailed Daily Coversheet Load option [KMPD TMG DLY TTL DETAIL] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the daily time-to-load values for the coversheet at a site. The report breaks the time-to-load metrics into ten second groupings.

The following example shows the prompts and user responses for the Detailed Daily Coversheet Load option:

```
Select Timing Reports Option: Detailed Daily Coversheet Load


           Daily Coversheet Time-to-Load (TTL) Detailed Report

       This detailed report displays daily time-to-load values for the
       coversheet at this site.  The report breaks the time-to-load
       metrics into ten second groupings.


Select End Date:  (9/20/2003 - 10/19/2003): Oct 19, 2003// T-3 <Enter>  (OCT 17,
2003)
Select # of Days Review:  (1-28): 1// <Enter>

     Select one of the following:

          1         Prime Time
          2         Non-Prime Time

Select Time Frame: 1// <Enter>  Prime Time

Device: HOME// <Enter>  TELNET DEVICE

Compiling timing stats..................
```

Here the user chose the end date and number of days data upon which to report up to that end date. However, since the user chose to start a few days back (T-3), the maximum number of day's data possible for this report is only 28 days (assuming 4 weeks of data accumulation before purging).

Figure 3-24: Detailed Daily Coversheet Load option—User prompts

The following example shows the actual report generated from the Detailed Daily Coversheet Load option:

```
                              Prime Time
                        Oct 17, 2003 - Oct 17, 2003        Printed: 10/20/03

Date         TTL Seconds     # of CV Loads   CV Percent
-------------------------------------------------------------------------------
10/17/03      0 to <10            8,682            51.2%
             10 to <20            6,273            37.0%
             20 to <30            1,238             7.3%
             30 to <40              374             2.2%
             40 to <50              175             1.0%
             50 to <60               77             0.5%
             60 to <70               51             0.3%
             70 to <80               30             0.2%
             80 to <90               18             0.1%
             90 or greater           37             0.2%
                             ----------      ----------
                                 16,955             100%

             Incomplete               0

  CV  = Coversheet
  TTL = Time-to-Load

Press RETURN to continue:
```

Figure 3-25: Detailed Daily Coversheet Load option—Report

This report provides the following data regarding detailed daily coversheet load data at a site in 10-second intervals for the specified day(s):

- Date—Specific day that the coversheet load began.
- TTL Seconds—Time-To-Load 10-second interval ranges.
- # of CV Loads—Total number of coversheet loads in the specified day(s) within each 10-second time interval.
- CV Percent—Total percentage of coversheet loads in the specified day(s) within each 10-second time interval.
- Total—Grand total of coversheet loads for the specified day(s).
- Incomplete—Total number of coversheets where the report option was unable to determine the coversheet end load time, so it was unable to calculate the time to load the coversheet.

If the report indicates an "excessive" time-to-load for a large percentage of coversheets, sites can run any of the other Timing Report options to get more specific information. What is considered "excessive" is site-specific (e.g., over 60 seconds or over 90 seconds, etc.).

For this report, the user chose to report detailed daily coversheet load data for a single day, 10/17/03 during prime time hours. The report shows that 51.2% (i.e., 8,682 coversheets) took less than 10 seconds to load. The report also shows that on that same day .2% (i.e., 37 coversheets) took 90 seconds or more to load. Overall, the report further shows that 95.5% of the coversheets loaded in less than 30 seconds.

Detailed Hourly Coversheet Load (Synonym: **DTH**)	**[KMPD TMG HRLY TTL DETAIL]**

The Detailed Hourly Coversheet Load option [KMPD TMG HRLY TTL DETAIL] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the hourly time-to-load values for the coversheet at a site. The report breaks the time-to-load metrics into ten second groupings.

The following example shows the prompts and user responses for the Detailed Hourly Coversheet Load option:

```
Select Timing Reports Option: Detailed Hourly Coversheet Load


           Hourly Coversheet Time-to-Load (TTL) Detail Report

       This detail report displays the hourly time-to-load values
       for the coversheet at this site.  The report breaks the
       time-to-load metrics into ten second groupings.


Select End Date:  (9/20/2003 - 10/19/2003): Oct 19, 2003// <Enter>  (OCT 19, 2003)
Select Hour(s) to Review:  (0-23): 8// <Enter>

Device: HOME// <Enter>  TELNET DEVICE

Compiling timing stats...
```

Here the user chose the day and hour of the day upon which to report.

Figure 3-26: Detailed Hourly Coversheet Load option—User prompts

The following example shows the actual report generated from the Detailed Hourly Coversheet Load option:

```
               Hourly Coversheet Time-to-Load (TTL) Detail Report
                         Oct 19, 2003 - Oct 19, 2003        Printed: 10/20/03

Date        Hr  TTL Seconds     # CV Loads      CV Percent
-------------------------------------------------------------------------------
10/19/03    8   0 to <10               104            62.3%
                10 to <20               53            31.7%
                20 to <30                6             3.6%
                30 to <40                3             1.8%
                40 to <50                1             0.6%
                50 to <60                0             0.0%
                60 to <70                0             0.0%
                70 to <80                0             0.0%
                80 to <90                0             0.0%
                90 or greater            0             0.0%
                                  ----------      ----------
                                       167            100%
                Incomplete               0


  CV  = Coversheet
  TTL = Time-to-Load

Press RETURN to continue:
```

Figure 3-27: Detailed Hourly Coversheet Load option—Report

This report provides the following data regarding detailed hourly coversheet load data at a site in 10-second intervals for the specified hour(s):

- Date—Specific day that the coversheet load began.
- HR—Specific hour that the coversheet load began.
- TTL Seconds—Time-To-Load 10-second interval ranges.
- # CV Loads—Total number of coversheet loads in the specified hour(s) within each 10-second time interval.
- CV Percent—Total percentage of coversheet loads in the specified hour(s) within each 10-second time interval.
- Total—Grand total of coversheet loads for the specified hour(s).
- Incomplete—Total number of coversheets where the report option was unable to determine the coversheet end load time, so it was unable to calculate the time to load the coversheet.

As with all Timing Report options, sites can run any of the other Timing Report options to find out more specific information.

For this report, the user chose to report detailed hourly coversheet load data for a single hour, 8:00:00 a.m. to 8:59:59 a.m. on 10/19/03. The report shows that within that hour 62.3% (i.e., 104 coversheets) took less than 10 seconds to load. The report also shows that within that hour on the same day .6% (i.e.,

37 coversheets) took less than 50 seconds to load. Overall, the report further shows that 97.6% of the coversheets loaded in less than 30 seconds within that hour. Finally, the report shows that no coversheet took more than 50 seconds total to load within that hour.

Threshold Alert (Synonym: **TAL**)	**[KMPD TMG TTL ALERT]**

The Threshold Alert option [KMPD TMG TTL ALERT] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the particular coversheet loads that had excessive time-to-load values. This report searches for a particular person, client name, or Internet Protocol (IP) address. There is no upper limit on the Time-To-Load Threshold.

The following example shows the prompts and user responses for the Threshold Alert option:

```
Select Timing Reports Option:  Threshold Alert


               Coversheet Time-to-Load (TTL) Alert Report

       This alerting report shows the particular coversheet loads
       that had excessive time-to-load values. This report will
       search for a particular person, a particular client name or
       IP address.


Select End Date:  (9/20/2003 - 10/19/2003): Oct 19, 2003// T-3 <Enter>  (OCT 17,
2003)
Select Hour(s) to Review:  (0-23): 8// <Enter>
Select Time-To-Load Threshold (Seconds): 60// <Enter>

     Select one of the following:

          1         User Name
          2         Client Name
          3         IP Address
          4         Any Occurrence

Search By: 4// <Enter>  Any Occurrence

Device: HOME// <Enter>  TELNET DEVICE

Compiling timing stats.....
```

Here the user chose the day, hour of the day, and threshold amount (in seconds) upon which to report. There is no upper limit on the Time-To-Load Threshold.

Here the user chose to report on any occurrence: user name, client name, and IP address.

Figure 3-28: Threshold Alert option—User prompts

The following example shows the actual report generated from the Threshold Alert option:

```
                  Coversheet Time-to-Load (TTL) Alert Report
                         Oct 17, 2003 - Oct 17, 2003        Printed: 10/20/03
                               Any Occurrence:
                            Threshold: 60 seconds

Date      Time  User Name        Client Name      IP Address       Time-to-Load
-------------------------------------------------------------------------------
10/17/03  08:11 GREEN,PATRICIA   nfl-gv57738.v08  10.65.50.16            71
          08:21 KHAKI,KATHERINE  gai-ee56313.v08  10.65.5.108            63
          08:29 NAVYBLUE,JUSTIN  gai-ee45760.gai  10.65.7.19              78
          08:30 LAVENDAR,ALBERT  nfl-gv59283.v08  10.65.38.54            76
          08:32 SALMON,WENDY L   nfl-gv57703.v08  10.65.42.33            64
          08:35 GRAPE,VIRGINIA   lak-ee48247.gai  10.66.1.225            63
          08:37 SILVER,GABRIELE  nfl-gv57710.v08  10.65.6.229            87
          08:38 SILVER,GABRIELE  nfl-gv57710.v08  10.65.6.229            87
          08:39 RUST,MARCUS C    gai_mi02.gaines  10.65.1.14             64
          08:40 FORESTGREEN,KI   gai-ee43202.gai  10.65.42.237          104
          08:43 PURPLE,JENNIFER  lak-ee56231.v08  10.66.2.114            65
          08:52 PURPLE,JENNIFER  lak-ee56231.v08  10.66.2.114           123
          08:56 PURPLE,JENNIFER  lak-ee56231.v08  10.66.2.114           117



Press RETURN to continue:
```

Figure 3-29: Threshold Alert option—Report

This report provides the following data regarding threshold alert data at a site listing only those coversheet loads exceeding the threshold interval chosen by the user for the specified hour(s) on the specified day(s):

- Date—Specific day that the coversheet load began.
- Time—Specific time that the coversheet load began (hours and minutes).
- User name—Name of the person signed on to the client workstation loading the coversheet.
- Client Workstation—Name of the client workstation that loaded the coversheet.
- IP Address—Internet Protocol (IP) address of the client workstation that loaded the coversheet.
- Time-To-Load—Total elapsed time to load the coversheet; loads that went beyond the threshold interval.

This report allows sites to find "out of line" load times. They can then track down the problem (e.g., network problem, individual CPRS setting problems, etc.). Again, as with all Timing Reports, sites can run any of the other Timing Report options to find out more specific information.

For this report, the user chose to report on coversheet loads that exceeded 60 seconds between 8:00:00 a.m. and 8:59:59 a.m. on 10/17/03. The report shows that the longest coversheet load took 123 seconds at 8:52 a.m. Jennifer Purple signed onto the client workstation identified as "lak-ee56231.v08" with an IP address of 10.66.2.114 and loaded that particular coversheet.

Real-Time Threshold Alert (Synonym: **RTA**)	**[KMPD TMG TTL ALERT RT]**

The Real-Time Threshold Alert option [KMPD TMG TTL ALERT RT] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the particular coversheet loads that have excessive time-to-load values for TODAY (real-time). This report searches for a particular person, client name, or Internet Protocol (IP) address.

The following example shows the prompts and user responses for the Real-Time Threshold Alert option:

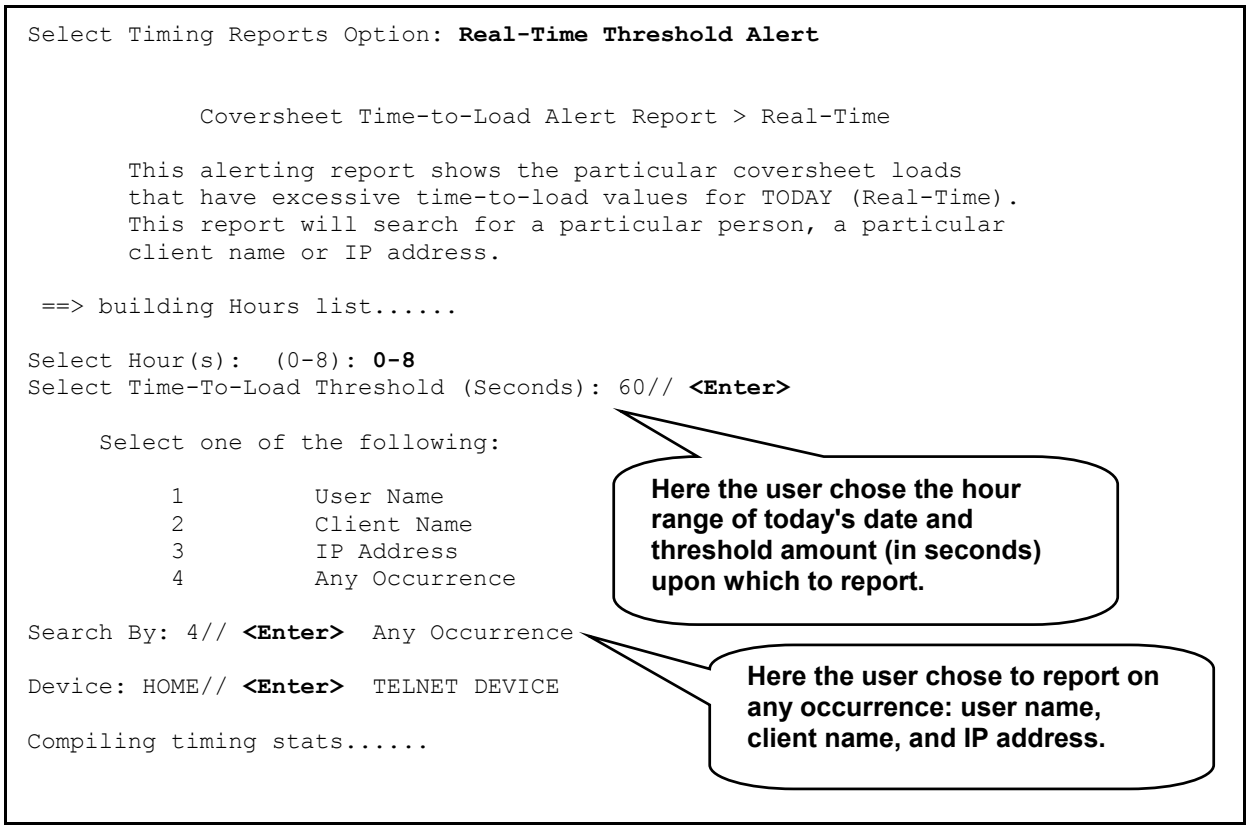

Figure 3-30: Real-Time Threshold Alert option—User prompts

This is a real-time report option. Thus, if it's 8:30 am when the site runs this report option the data will only be available from midnight to 8:00 a.m. However, if the option is run at 2:00 p.m. the data will be available from midnight to 1400 hours.

The following example shows the actual report generated from the Real-Time Threshold Alert option:

```
                Coversheet Time-to-Load Alert Report > Real-Time
                          Hour(s): 0,1,2,3,4,5,6,7,8,        Printed: 10/20/03
                                Any Occurrence:
                             Threshold: 60 seconds

Date      Time  User Name        Client Name      IP Address       Time-to-Load
-------------------------------------------------------------------------------
10/20/03  00:24 CHARTREUSE,JULI  nfl-gv57694.v08  10.65.34.238           70
          00:41 RUST,MARCUS C    gai_mi02.gaines  10.65.1.14             72
          00:57 RUST,MARCUS C    gai_mi02.gaines  10.65.1.14             78
          00:59 SKYBLUE,SHERYL   gai-ee45112.gai  10.65.7.59            143

          02:01 LAVENDAR,CORAZO  lak-ee50691.gai  10.66.1.232            69

          03:45 CHARTREUSE,JULI  gai-ee50606.gai  10.65.5.154            74
          03:51 HOTPINK,ALBERT   vhanflmul7.v08.  10.65.10.17            65
          03:57 HOTPINK,ALBERT   vhanflmul7.v08.  10.65.10.17            61

          04:02 TEAL,ROBERT L    gai-ee45098.gai  10.65.34.15           161
          04:10 COPPER,CARMEN R  nfl-1c55788.v08  10.66.1.120           437


Enter RETURN to continue or '^' to exit: <Enter>


                Coversheet Time-to-Load Alert Report > Real-Time
                          Hour(s): 0,1,2,3,4,5,6,7,8,        Printed: 10/20/03
                                Any Occurrence:
                             Threshold: 60 seconds

Date      Time  User Name        Client Name      IP Address       Time-to-Load
-------------------------------------------------------------------------------
10/20/03  04:19 SCARLET,DIKEA N  gai-ee47466.gai  10.65.40.82           113
          04:22 GOLD,MICHAEL S   gai-ee50606.gai  10.65.5.154            82
          04:39 HOTPINK,ALBERT   vhanflmul7.v08.  10.65.10.17            68
          04:56 SCARLET,DIKEA N  gai-ee55831.gai  10.65.40.86            75

          05:19 HOTPINK,ALBERT   vhanflmul7.v08.  10.65.10.17            62

          07:07 GREEN,PATRICIA   nfl-gv57738.v08  10.65.50.16            98
          07:18 BURGUNDY,MARK T  gai-ee51177.gai  10.65.209.33           64
          07:43 ALMOND,LIDIA     nfl-gv57678.v08  10.65.2.55             72
          07:59 CERULEAN,CAROL   nfl-gv50903.v08  10.65.50.13            96

          08:01 FUCHSIA,JUDITH   lak-ee55771.v08  10.66.0.157           108


Enter RETURN to continue or '^' to exit: <Enter>
```

```
                Coversheet Time-to-Load Alert Report > Real-Time
                          Hour(s): 0,1,2,3,4,5,6,7,8,        Printed: 10/20/03
                                Any Occurrence:
                             Threshold: 60 seconds

Date      Time  User Name        Client Name      IP Address       Time-to-Load
-------------------------------------------------------------------------------
10/20/03  08:04 EGGPLANT,JUDIAN  nfl-gv57600.v08  10.65.50.18            91
          08:06 AUBERGINE,SARAH  nfl-gv45092.v08  10.65.38.111          111
          08:10 CREAMYWHITE,PAT  lak-ee56195.v08  10.66.0.106           203
          08:11 BRONZE,SAFEER A  gai-ee45078.gai  10.65.4.153            73
          08:14 CREAMYWHITE,PAT  lak-ee56195.v08  10.66.0.106            82
          08:15 CHESTNUT,COLLEE  gai-ee45753.gai  10.65.4.93            156
          08:16 CHERRY,LYNDA L   gai-ee55831.gai  10.65.40.86            75
          08:17 BRONZE,SAFEER A  gai-ee45078.gai  10.65.4.153            61
          08:18 BRICKRED,SOPHIA  gai-ee57094.v08  10.65.34.91            70
          08:19 KHAKI,KATHERINE  nfl-gv57656.v08  10.65.5.17             95
          08:2  DARKTAN,RICHARD  nfl-gv59301.v08  10.65.7.234            66
          08:20 FUCHSIA,JUDITH   lak-ee55771.v08  10.66.0.157            63
          08:21 BEIGE,CATHEY M   nfl-lc57893.v08  10.66.0.134           193


Enter RETURN to continue or '^' to exit: <Enter>


                Coversheet Time-to-Load Alert Report > Real-Time
                          Hour(s): 0,1,2,3,4,5,6,7,8,        Printed: 10/20/03
                                Any Occurrence:
                             Threshold: 60 seconds

Date      Time  User Name        Client Name      IP Address       Time-to-Load
-------------------------------------------------------------------------------
10/20/03  08:25 SILVER,GABRIELE  nfl-gv57710.v08  10.65.6.229            69
          08:26 BRASS,CHERYL N   oca-ee53033.gai  10.65.211.244          68
          08:27 NAVYBLUE,JUSTIN  gai-ee45760.gai  10.65.7.19             61
          08:28 CERULEAN,CAROL   nfl-gv50903.v08  10.65.50.13            72
          08:31 EGGPLANT,JUDIAN  nfl-gv57600.v08  10.65.50.18            68
          08:32 BEIGE,CATHEY M   nfl-lc57893.v08  10.66.0.134           273
          08:33 APRICOT,BENJAMI  gai_mirx.gaines  10.65.1.54             61
          08:35 AUBERGINE,SARAH  nfl-gv45092.v08  10.65.38.111          162
          08:37 PERIWINKLE,ANIS  gai-ee56665.v08  10.65.5.91             65
          08:39 SIENNA-ORANGE,M  jax-ee51734.gai  10.65.208.110          69
          08:40 MAGENTA,MERRY-J  gai-ee54233.gai  10.65.34.82            70
          08:41 FORESTGREEN,RAU  lak-ee50701.gai  10.66.2.71             66
          08:44 PURPLE,JENNIFER  lak-ee56231.v08  10.66.2.114           117


Enter RETURN to continue or '^' to exit: <Enter>
```

```
                Coversheet Time-to-Load Alert Report > Real-Time
                          Hour(s): 0,1,2,3,4,5,6,7,8,        Printed: 10/20/03
                                Any Occurrence:
                             Threshold: 60 seconds

Date      Time  User Name        Client Name      IP Address       Time-to-Load
-------------------------------------------------------------------------------
10/20/03  08:45 LIMEGREEN,LISA   gai-ee57078.v08  10.65.7.129           106
          08:47 BROWN,KAREN L    gai-ee50888.gai  10.65.42.86            61
          08:49 INDIGO,JENNIFER  lak-ee49015.gai  10.66.2.181            84
          08:51 ORANGE,TINA      nfl-lc59924.v08  10.66.1.219            71



   Total Count:  50

Press RETURN to continue:
```

Figure 3-31: Real-Time Threshold Alert option—Report

This report provides the following data regarding threshold alert data at a site listing only those coversheet loads exceeding the threshold interval chosen by the user for the specified hour(s) on the day the report was run (real-time):

- Date—Today's date that the coversheet load began (real-time).
- Time—Specific time that the coversheet load began (hours and minutes, real time).
- User name—Name of the person signed on to the client workstation loading the coversheet (real-time).
- Client Workstation—Name of the client workstation that loaded the coversheet (real-time).
- IP Address—Internet Protocol (IP) address of the client workstation that loaded the coversheet (real-time).
- Time-To-Load—Total elapsed time to load the coversheet; loads that went beyond the threshold interval (real-time).
- Total—Grand total of report line items listed (real-time).

As with the Threshold Alert report option [KMPD TMG TTL ALERT], problems can be identified. However, because this is real-time report, sites can track what is going on throughout the day.

For more information on the Threshold Alert report option [KMPD TMG TTL ALERT], please refer to the "Threshold Alert" topic in this chapter.

For this report, the user chose to report on coversheet loads that exceeded 60 seconds between the hours of 00:00:00 a.m. and 8:59:59 a.m. on 10/20/03. The report shows that the longest coversheet load took 437 seconds at 4:10 a.m. Carmen R. Copper signed onto the client workstation identified as "nfl-lc55788.v08" with an IP address of 10.66.1.120 and loaded that particular coversheet.

Real-Time Average Hourly Coversheet Load (Synonym: **RAV**)	**[KMPD TMG HRLY TTL RT]**

The Real-Time Average Hourly Coversheet Load option [KMPD TMG HRLY TTL RT] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the hourly average time-to-load value for the coversheet at a site over a 24-hour period.

The following example shows the prompts and user responses for the Real-Time Average Hourly Coversheet Load option:

```
Select Timing Reports Option:  Real-Time Average Hourly Coversheet Load


          Real-Time Hourly Coversheet Time-to-Load (TTL) Report

       This report displays the hourly average time-to-load value for
       the coversheet at this site over 24 hours.


Device: HOME// <Enter>  TELNET DEVICE

Compiling timing stats......
```

Figure 3-32: Real-Time Average Hourly Coversheet Load option—User prompts

This is a real-time report option. Data is only available from midnight to 8:00 a.m.

The following example shows the actual report generated from the Real-Time Average Hourly Coversheet Load option:

```
             Real-Time Hourly Coversheet Time-to-Load (TTL) Report
                              Oct 20, 2003              Printed: 10/20/03

                    |---------------Seconds---------------|
Date         Hour    TTL Average   TTL Minimum   TTL Maximum   # of CV Loads
-------------------------------------------------------------------------------
10/20/03     00             15             6           143             73
             01             14             6            52            103
             02             16             5            69             97
             03             17             5            74             93
             04             25             5           437             78
             05             10             5            62            139
             06             11             4            59            270
             07             12             4            98            963
             08             16             5           273          2,028
                                                                   ----------
                                                                        3,844

             Incomplete:   68


  CV  = Coversheet
  TTL = Time-to-Load

Press RETURN to continue:
```

Figure 3-33: Real-Time Average Hourly Coversheet Load option—Report

This report provides the following data regarding coversheet loads at a site for each hour of the specified number of day(s):

- Date—Today's date that the coversheet load began (real-time).
- Hour—Specific hour that the coversheet load began (00 - 23, real-time).
- TTL Average—Average time-to-load (in seconds) for each hour of the day (real-time).
- TTL Minimum—Minimum time-to-load (in seconds) for each hour of the day (real-time).
- TTL Maximum—Maximum time-to-load (in seconds) for each hour of the day (real-time).
- # of CV Loads—Total number of coversheet loads for:
  - Each hour of the day.
  - Grand total for the entire day.
- Incomplete—Total number of coversheets where the report option was unable to determine the coversheet end load time, so it was unable to calculate the time to load the coversheet.

For this report, the user chose to report on the current day (10/20/03, midnight to 8:00 a.m.) of coversheet load data (real-time). The report shows that at 08:00 a.m. on 10/20/03, for example, there were a total of 2,028 coversheets loaded with an average time-to-load for each coversheet of 16 seconds. At that same hour the report also shows that the shortest coversheet time-to-load took only 5 seconds and the longest

coversheet time-to-load took 273 seconds (4 minutes and 55 seconds). Also, the report shows that there were a total of 68 coversheets that did not load to completion.

CM Tools Background Driver [KMPD BACKGROUND DRIVER]

On a nightly basis, the CM Tools Background Driver option [KMPR BACKGROUND DRIVER] does the following:

- Moves the data within the ^TMP("KMPDH",$J) collection global. to the CM HL7 DATA file (#8973.1).
- Moves the data within the ^KMPTMP("KMPDT") collection global to the CP TIMING file (#8973.2)

Upon completion, the data within both the ^TMP("KMPDH",$J) and ^KMPTMP("KMPDT") temporary collection globals is purged.

Every Sunday night, the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] monitors and trims (records deleted) the following files to ensure that the correct maximum number of day's data is maintained as determined by the appropriate CP parameters:

- CM HL7 DATA file (#8973.1)—The maximum amount of data collected is determined by the Purge HL7 Data After CP parameter.
- CP TIMING file (#8973.2)—The maximum amount of data collected is determined by the Purge Timing Data After CP parameter.

Also, each Sunday night, the CM Tools Background Driver option automatically compresses the information contained within the CM HL7 DATA file (#8973.1) into weekly statistics. These weekly statistics are converted into an electronic mail message that is automatically transferred via network mail (i.e., VistA MailMan) and merged into a Capacity Planning National Database where this data is used for evaluation purposes.

The CM Tools Background Driver option [KMPD BACKGROUND DRIVER] is *not* assigned to any menu. This option is scheduled through TaskMan to start the Capacity Management Tools software's background driver routine.

This option should be (re)scheduled with TaskMan's Schedule/Unschedule Options [XUTM SCHEDULE] located under the Taskman Management menu [XUTM MGR], see Figure 3-34.

The installation of the CM Tools software automatically sets the Background Driver job to run daily at 1:30 a.m. It does the same thing as TaskMan's Schedule/Unschedule Option, which saves the installer the job of having to set up the Background Driver job later.

This option lets users set the following TaskMan parameters in the OPTION SCHEDULING file (#19.2, see Figure 3-35 and Figure 3-36):

Parameter	Field Name (Number) (in File #19.2)	Description
QUEUED TO RUN AT WHAT TIME	QUEUED TO RUN AT WHAT TIME field (#2)	This is the date/time the user wants this option to be started by TaskMan. It should be scheduled to run every day at 1:30 a.m.
DEVICE FOR QUEUED JOB OUTPUT	DEVICE FOR QUEUED JOB OUTPUT field (#3)	The field is the name of the device on which the specified option will be queued to print by TaskMan. At the time of queueing, If TaskMan cannot identify a device by this name, the job will not be run. Only enter a device if the job needs an output device.
QUEUED TO RUN ON VOLUME SET	QUEUED TO RUN ON VOLUME SET field (#5)	This field is used to let the Task Manager know where to run the queued job. It is the Volume set [:node] upon which the user wants the job to run. Answer must be 2-15 characters.
RESCHEDULING FREQUENCY	RESCHEDULING FREQUENCY field (#6)	This is the frequency at which the user wants the job to automatically run. For the CM Tools Background Driver, this should be set to "1D" so that it will run every day. If this field is left blank, then the job will run only once.

Table 3-2: TaskMan parameters/fields, stored in the OPTION SCHEDULING file (#19.2)

For more information on TaskMan, please refer to the *Kernel Systems Manual*.

Capacity Planning Services *strongly* recommends that the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] be scheduled to run every day at 1:30 a.m., because this background driver is the main mechanism by which the following sub-globals are purged nightly:

- **^KMPD(8973.1)—CM HL7 DATA file (#8973.1): Records are purged as prescribed by the Purge HL7 Data After CP parameter, which is stored in the HL7 WEEKS TO KEEP DATA field (#3.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].**
- **^KMPD(8973.2)—CP TIMING file (#8973.2): Records are purged as prescribed by the Purge Timing Data After CP parameter, which is stored in the TIMING WEEKS TO KEEP DATA field (#4.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].**

Modification of the frequency and time may have adverse effects on the size of the temporary ^KMPD(8973.1) and ^KMPD(8973.2) sub-globals and on the number of entries within the CM HL7 DATA file (#8973.1) and CP TIMING (#8973.2) files.

The following examples show typical displays when using TaskMan's Schedule/Unschedule Options option:

```
Select Systems Manager Menu Option: Taskman Management


          Schedule/Unschedule Options
          One-time Option Queue
          Taskman Management Utilities ...
          List Tasks
          Dequeue Tasks
          Requeue Tasks
          Delete Tasks
          Print Options that are Scheduled to run
          Cleanup Task List
          Print Options Recommended for Queueing


Select Taskman Management Option: Schedule/Unschedule Options

Select OPTION to schedule or reschedule: KMPD BACKGROUND DRIVER <Enter>   CM Tools
Background Driver
         ...OK? Yes// <Enter> (Yes)
      (R)
```

At this point users are automatically placed into a ScreenMan form, see Figure 3-35.

Figure 3-34: Running TaskMan's Schedule/Unschedule Options option to set up the CM Tools Background Driver—User prompts

After selecting the specific option in TaskMan's Schedule/Unschedule Options option, the user is automatically placed into the following ScreenMan form:

```
                          Edit Option Schedule
    Option Name: KMPD BACKGROUND DRIVER
    Menu Text: CM Tools Background Driver                    TASK ID:
  ____________________________________________________________________________

  QUEUED TO RUN AT WHAT TIME:

DEVICE FOR QUEUED JOB OUTPUT:

 QUEUED TO RUN ON VOLUME SET:

      RESCHEDULING FREQUENCY:

              TASK PARAMETERS:

             SPECIAL QUEUEING:

_____________________________________________________________________________




COMMAND:                                    Press <PF1>H for help     Insert
```

Figure 3-35: Sample TaskMan's Schedule/Unschedule Options option (ScreenMan)—User prompts, *before* scheduling the CM Tools Background Driver

```
                          Edit Option Schedule
    Option Name: KMPD BACKGROUND DRIVER
    Menu Text: CM Tools Background Driver                    TASK ID: 2156701
  ____________________________________________________________________________

  QUEUED TO RUN AT WHAT TIME: OCT 2,2003@01:30

DEVICE FOR QUEUED JOB OUTPUT:

 QUEUED TO RUN ON VOLUME SET:

      RESCHEDULING FREQUENCY: 1D

              TASK PARAMETERS:

             SPECIAL QUEUEING:

_____________________________________________________________________________




COMMAND:                                    Press <PF1>H for help     Insert
```

Figure 3-36: Sample TaskMan's Schedule/Unschedule Options option (ScreenMan) —User prompts, *after* scheduling the CM Tools Background Driver

Glossary

AAC	**A**ustin **A**utomation **C**enter.
ADPAC	**A**utomated **D**ata **P**rocessing **A**pplication **C**oordinator.
ANSI	**A**merican **N**ational **S**tandards **I**nstitute.
API	**A**pplication **P**rogram **I**nterface.
APPLICATION	VistA software and documentation that supports the automation of a service (e.g., Laboratory or Pharmacy) within the Veterans Health Administration (VHA).
APPLICATION PROGRAM INTERFACE (API)	Program calls provided for use by application programmers. APIs allow programmers to carry out standard computing activities without needing to duplicate utilities in their own software. APIs also further DBA goals of system integration by channeling activities, such as adding new users, through a limited number of callable entry points.
ARRAY	An arrangement of elements in one or more dimensions. An M array is a set of nodes referenced by subscripts that share the same variable name.
BULLETINS	Electronic mail messages that are automatically delivered by VistA MailMan under certain conditions. For example, a bulletin can be set up to "fire" when database changes occur, such as adding a new Institution in the INSTITUTION file (#4). Bulletins are fired by bulletin-type cross-references.
CALLABLE ENTRY POINT	Authorized program call that may be used in any VistA application software. The DBA maintains the list of DBIC-approved entry points.
CAPACITY PLANNING	The process of assessing a system's capacity and evaluating its efficiency relative to workload in an attempt to optimize system performance. (Formerly known as Capacity Management.)
CHUI	**CH**aracter-based **U**ser **I**nterface (i.e., roll-and-scroll).
CM TOOLS	**C**apacity **M**anagement Tools. A fully automated support tool developed by Capacity Planning (CP) Services, which entails the daily capture of VistA HL7 workload information from participating sites.
CO	**C**entral **O**ffice.
COVERSHEET	The Computerized Patient Record System (CPRS) coversheet, which is the main CPRS page. This main page is a screen of the CPRS patient chart that displays an overview of the patient's record.
CROSS REFERENCE	There are several types of cross-references available. Most generally, a VA FileMan cross-reference specifies that some action be performed when the field's value is entered, changed, or deleted. For several types of cross-references, the action consists of putting the value into a list; an index used when looking-up an entry or when sorting. The regular cross-reference is used for sorting and for lookup; users can limit it to sorting only.

DATA	A representation of facts, concepts, or instructions in a formalized manner for communication, interpretation, or processing by humans or by automatic means. The information users enter for the computer to store and retrieve. Characters that are stored in the computer system as the values of local or global variables. VA FileMan fields hold data values for file entries.
DATA DICTIONARY (DD)	The **D**ata **D**ictionary is a global containing a description of what kind of data is stored in the global corresponding to a particular file. VA FileMan uses the data internally for interpreting and processing files. A Data Dictionary contains the definitions of a file's elements (fields or data attributes); relationship to other files; and structure or design. Users generally review the definitions of a file's elements or data attributes; programmers review the definitions of a file's internal structure.
DBA	**D**ata**b**ase **A**dministrator, oversees software development with respect to VistA Standards and Conventions (SAC) such as namespacing. Also, this term refers to the Database Administration function and staff.
DBIA	**D**ata**b**ase **I**ntegration **A**greement, a formal understanding between two or more VistA software applications that describes how data is shared or how software interacts. The DBA maintains a list of DBIAs.
DEFAULT	Response the computer considers the most probable answer to the prompt being given. It is identified by double slash marks (//) immediately following it. This allows users the option of accepting the default answer or entering your own answer. To accept the default, users simply press the Enter (or Return) key. To change the default answer, type in your response.
DELIMITER	Special character used to separate a field, record, or string. VA FileMan uses the caret character ("^") as the delimiter within strings.
DIRECT MODE UTILITY	A program call that is made when working in direct programmer mode. A direct mode utility is entered at the MUMPS prompt (e.g., >D ^XUP). Calls that are documented as direct mode utilities *cannot* be used in application software code.
DoD	**D**epartment **o**f **D**efense.
ENCRYPTION	"Cryptographic transformation of data (plaintext) into a form (ciphertext) that conceals the data's original meaning to prevent it from being known or used."1
ENTRY	VA FileMan record. An internal entry number (IEN, the .001 field) uniquely identifies an entry in a file.
EVS	**E**nterprise **V**istA **S**upport (formerly known as NVS).
EXTRINSIC FUNCTION	Extrinsic function is an expression that accepts parameters as input and returns a value as output that can be directly assigned.

DEA Web site (http://www.deadiversion.usdoj.gov/ecomm/e_rx/con_ops/index.html): "Public Key Infrastructure Analysis Concept of Operations," Section 3.4.1 "Terms and Definitions"

FACILITY	Geographic location at which VA business is performed.
FIELD	In a record, a specified area used for the value of a data attribute. The data specifications of each VA FileMan field are documented in the file's data dictionary. A field is similar to blanks on forms. It is preceded by words that tell users what information goes in that particular field. The blank, marked by the cursor on your terminal screen, is where users enter the information.
FILE	Set of related records treated as a unit. VA FileMan files maintain a count of the number of entries or records.
FILE MANAGER (VA FILEMAN)	VistA's Database Management System (DBMS). The central component of Kernel that defines the way standard VistA files are structured and manipulated.
FORM	Please refer to the Glossary entry for "ScreenMan Forms."
FORUM	The central E-mail system within VistA. Developers use FORUM to communicate at a national level about programming and other issues. FORUM is located at the Washington, DC OI Field Office (162-2).
FREE TEXT	A DATA TYPE that can contain any printable characters.
GAL	**G**lobal **A**ddress **L**ist.
GLOBAL VARIABLE	Variable that is stored on disk (M usage).
GUI	**G**raphical **U**ser **I**nterface.
HEC	**H**ealth **E**ligibility **C**enter.
HEALTH LEVEL SEVEN (HL7)	National level standard for data exchange in all healthcare environments regardless of individual computer applications.
HEALTH LEVEL SEVEN (HL7) VISTA	Messaging system developed as VistA software that follows the HL7 Standard for data exchange.
HIPAA	**H**ealth **I**nsurance **P**ortability and **A**ccountability **A**ct.
HSD&D	**H**ealth **S**ystems **D**esign and **D**evelopment.
INPUT TEMPLATE	A pre-defined list of fields that together comprise an editing session.
INSTITUTION	A Department of Veterans Affairs (VA) facility assigned a number by headquarters, as defined by Directive 97-058. An entry in the INSTITUTION file (#4) that represents the Veterans Health Administration (VHA).
INTEGRATION AGREEMENTS (IA) (Formerly known as DATABASE INTEGRATION AGREEMENTS [DBIA])	**I**ntegration **A**greements (IA) define agreements between two or more VistA software applications to allow access to one development domain by another. Any software developed for use in the VistA environment is required to adhere to this standard; as such it applies to vendor products developed within the boundaries of DBA assigned development domains (e.g., MUMPS AudioFax). An IA defines the attributes and functions that specify access. All IAs are recorded in the Integration Agreement database on FORUM. Content can be viewed using the DBA menu or the Health Systems Design & Development's Web page.

INTERNAL ENTRY NUMBER (IEN)	The number used to identify an entry within a file. Every record has a unique internal entry number.
IRA	**I**nitial **R**equest **A**nalysis.
IRM	**I**nformation **R**esource **M**anagement. A service at VA medical centers responsible for computer management and system security.
ISO	**I**nformation **S**ecurity **O**fficer.
ISS	**I**nfrastructure and **S**ecurity **S**ervices.
ITAC	**I**nformation **T**echnology **A**pproval **C**ommittee was established as an advisory committee to the Chief Information Officer to ensure that the Information Technology (IT) program supports VHA goals and to provide guidance concerning priorities for IT initiatives.
IV&V	**I**ndependent **V**alidation and **V**erification Team acts to ensure the functional integrity and technical correctness of HSD&D software, processes, and documentation.
KERNEL	Kernel is VistA software that functions as an intermediary between the host operating system and other VistA software applications (e.g., Laboratory, Pharmacy, IFCAP, etc.). Kernel provides a standard and consistent user and program interface between software applications and the underlying M implementation.
LAN	**L**ocal **A**rea **N**etwork.
LDAP	**L**ightweight **D**irectory **A**ccess **P**rotocol.
LINK	Non-specific term referring to ways in which files may be related (via pointer links). Files have links into other files.
MAILMAN	VistA software that provides a mechanism for handling electronic communication, whether it's user-oriented mail messages, automatic firing of bulletins, or initiation of server-handled data transmissions.
MENU	List of choices for computing activity. A menu is a type of option designed to identify a series of items (other options) for presentation to the user for selection. When displayed, menu-type options are preceded by the word "Select" and followed by the word "option" as in Select Menu Management option: (the menu's select prompt).
MENU SYSTEM	The overall Menu Manager logic as it functions within the Kernel framework.
MENU TEXT	The descriptive words that appear when a list of option choices is displayed. Specifically, the Menu Text field of the OPTION file (#19). For example, User's Toolbox is the menu text of the XUSERTOOLS option. The option's synonym is TBOX.
NAMESPACING	Convention for naming VistA software elements. The DBA assigns unique two to four character string prefix for software developers to use in naming routines, options, and other software elements so that software can coexist. The DBA also assigns a separate range of file numbers to each software application.
NVS	**N**ational **V**istA **S**upport (now known as EVS).

OIFO	**O**ffice of **I**nformation **F**ield **O**ffice.
OPTION	An entry in the OPTION file (#19). As an item on a menu, an option provides an opportunity for users to select it, thereby invoking the associated computing activity. Options may also be scheduled to run in the background, non-interactively, by TaskMan.
OPTION NAME	Name field in the OPTION file (e.g., XUMAINT for the option that has the menu text "Menu Management"). Options are namespaced according to VistA conventions monitored by the DBA.
PACKAGE	Please refer to the Glossary entry for "Software."
POINTER	The address at which a data value is stored in computer memory. A relationship between two VA FileMan files, a pointer is a file entry that references another file (forward or backward). Pointers can be an efficient means for applications to access data by referring to the storage location at which the data exists.
PRIMARY KEY	A Data Base Management System construct, where one or more fields uniquely define a record (entry) in a file (table). The fields are required to be populated for every record on the file, and are unique, in combination, for every record on the file.
PRIME TIME HOURS	Prime time hours are 8 a.m. to 5 p.m. Monday through Friday, *excluding* holidays. Non-prime time hours are all other hours (i.e., weekends, nights and holidays).
PRIVATE INTEGRATION AGREEMENT	Where only a single application is granted permission to use an attribute/function of another VistA software application. These IAs are granted for special cases, transitional problems between versions, and release coordination. A Private IA is also created by the requesting software application based on their examination of the custodian software application's features. An example would be where one software application distributes a patch from another software application to ensure smooth installation.
PROMPT	The computer interacts with the user by issuing questions called prompts, to which the user issues a response.
RECORD	Set of related data treated as a unit. An entry in a VA FileMan file constitutes a record. A collection of data items that refer to a specific entity (e.g., in a name-address-phone number file, each record would contain a collection of data relating to one person).
REQUIRED FIELD	A mandatory field, one that must not be left blank. The prompt for such a field will be repeated until the user enters a valid response.
REVERSE VIDEO	The reversal of light and dark in the display of selected characters on a video screen. For example, if text is normally displayed as black letters on a white background, reverse video presents the text as white letters on a black background or vice versa.

ROUTINE	Program or a sequence of instructions called by a program that may have some general or frequent use. M routines are groups of program lines, which are saved, loaded, and called as a single unit via a specific name.
SAC	**S**tandards **a**nd **C**onventions. Through a process of quality assurance, all VistA software is reviewed with respect to SAC guidelines as set forth by the Standards and Conventions Committee (SACC).
SACC	VistA's **S**tandards **a**nd **C**onventions **C**ommittee. This Committee is responsible for maintaining the SAC.
SCREEN EDITOR	VA FileMan's Screen-oriented text editor. It can be used to enter data into any WORD-PROCESSING field using full-screen editing instead of line-by-line editing.
SCREENMAN FORMS	Screen-oriented display of fields, for editing or simply for reading. VA FileMan's Screen Manager is used to create forms that are stored in the FORM file (#.403) and exported with a software application. Forms are composed of blocks (stored in the BLOCK file [#.404]) and can be regular, full screen pages or smaller, "pop-up" pages.
SCREEN-ORIENTED	A computer interface in which users see many lines of data at a time and in which users can move your cursor around the display screen using screen navigation commands. Compare to Scrolling Mode.
SCROLLING MODE	The presentation of the interactive dialog one line at a time. Compare to Screen-oriented.
SEPG	**S**oftware **E**ngineering **P**rocess **G**roup.
SOFTWARE	The set of programs, files, documentation, help prompts, and installation procedures required for a given software application (e.g., Laboratory, Pharmacy, and PIMS). A VistA software environment is composed of elements specified via the PACKAGE file (#9.4). Elements include files, associated templates, namespaced routines, and namespaced file entries from the OPTION, HELP FRAME, BULLETIN, and FUNCTION files. As public domain software, VistA software can be requested through the Freedom of Information Act (FOIA).
SUPPORTED REFERENCE INTEGRATION AGREEMENT	This applies where any VistA application may use the attributes/functions defined by the IA (these are also called "**Public**"). An example is an IA that describes a standard API such as DIE or VADPT. The software that creates/maintains the Supported Reference must ensure it is recorded as a Supported Reference in the IA database. There is no need for other VistA software applications to request an IA to use these references; they are open to all by default.
TEMPLATE	Means of storing report formats, data entry formats, and sorted entry sequences. A template is a permanent place to store selected fields for use at a later time. Edit sequences are stored in the INPUT TEMPLATE file (#.402), print specifications are stored in the PRINT TEMPLATE file (#.4), and search or sort specifications are stored in the SORT TEMPLATE file (#.401).

TOOLKIT	Toolkit (or Kernel Toolkit) is a robust set of tools developed to aid the VistA development community, and Information Resources Management (IRM), in writing, testing, and analysis of code. They are a set of generic tools that are used by developers, technical writers, software quality assurance (SQA) personnel, and software applications to support distinct tasks. Toolkit provides utilities for the management and definition of development projects. Many of these utilities have been used by the OI Field Office–Oakland for internal management and have proven valuable. Toolkit also includes tools provided by other OI Field Offices based on their proven utility.
TRIGGER	A type of VA FileMan cross-reference. Often used to update values in the database given certain conditions (as specified in the trigger logic). For example, whenever an entry is made in a file, a trigger could automatically enter the current date into another field holding the creation date.
VA	The Department of **V**eterans **A**ffairs, formerly called the **V**eterans **A**dministration.
VA FILEMAN	Set of programs used to enter, maintain, access, and manipulate a database management system consisting of files. A software application of online computer routines written in the M language, which can be used as a standalone database system or as a set of application utilities. In either form, such routines can be used to define, enter, edit, and retrieve information from a set of computer stored files.
VAMC	**V**eterans **A**ffairs **M**edical **C**enter.
VARIABLE	Character, or group of characters, that refer(s) to a value. M (previously referred to as MUMPS) recognizes 3 types of variables: local variables, global variables, and special variables. Local variables exist in a partition of main memory and disappear at sign-off. A global variable is stored on disk, potentially available to any user. Global variables usually exist as parts of global arrays. The term "global" may refer either to a global variable or a global array. A special variable is defined by systems operations (e.g., $TEST).
VHA	**V**eterans **H**ealth **A**dministration.
VISN	**V**eterans **I**ntegrated **S**ervice **N**etwork.
VISTA	**V**eterans Health **I**nformation **S**ystems and **T**echnology **A**rchitecture (VistA) of the Veterans Health Administration (VHA), Department of Veterans Affairs (VA). VistA software, developed by the VA, is used to support clinical and administrative functions at VHA sites nationwide. Server-side code is written in M, and, via Kernel, runs on all major M implementations regardless of vendor. VistA is composed of software that undergoes a quality assurance process to ensure conformity with namespacing and other VistA standards and conventions.
WAN	**W**ide **A**rea **N**etwork.

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